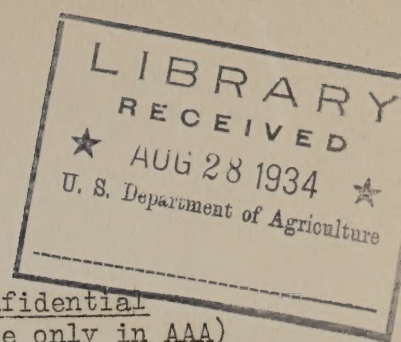


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A PROPOSED PRODUCTION CONTROL PROGRAM
FOR GRAINS AND LIVESTOCK

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A PROPOSED 1935 PRODUCTION PROGRAM FOR
GRAINS AND LIVESTOCK

PART I

Present Status Of Control Plans And Economic Situation
Of The Commodities Involved

I. General summary of feed and livestock outlook 1934-35.

The feed and livestock situation is being very materially altered during the last half of 1934 as a result of the widespread and unprecedented drought. This is resulting in an abnormally small supply of feed for the 1934-35 year accompanied with relatively high feed prices, and an unusually large forced liquidation of livestock during the last half of 1934, which will inevitably result in materially smaller market supplies after the period of liquidation is terminated. These developments are of vital importance in program planning for 1935 and subsequent years.

In the August 1 crop report of the Department, the production of feed in 1934 was estimated as follows:

Corn	1,607,000,000 bushels
Oats	545,000,000 bushels
Barley	119,000,000 bushels
Grain Sorghum	54,300,000 bushels
Wheat (fed)	50,000,000 bushels

This is equivalent to 59,600,000 tons of feed grain for the 1934-35 season as compared with 91,700,000 tons in 1933-34, and a ten-year average (1923-32) of 102,700,000 tons.

The hay crop is estimated at 53,700,000 tons as compared with 74,600,000 tons available during 1933-34, and a ten-year average of 83,800,000 tons.

If we disposed of 10,000,000 head of cattle and 8,000,000 head of sheep in excess of the number that probably would have been marketed if no drought had occurred, the number of head of livestock on farms January 1 probably would be about as follows:

Hogs	45 million head
Cattle	55 " "
Dairy Cows	23 " "
Other	32 " "
Sheep and Lambs	45 " "
Chickens	400 " "
Horses and Mules	16.6 " "

Under conditions of the above feed supply and livestock on farms January 1, 1935, the feed supply per animal unit would be as follows:

Per grain consuming animal unit	1934-35 .51	1933-34 .67	1923-32 .74
Per hay consuming animal unit	.77	.97	1.09

It is fairly obvious, from the limited facilities for disposing of cattle and sheep, that January 1 numbers will not be so small in the case of these two classes of animals as indicated above. However, in view of the prospective poor condition of livestock at the beginning of the winter, if a severe winter develops, excessive death losses may bring numbers down to the level indicated. This would mean that we would go from the top to the bottom of a cattle production cycle in one year whereas normally it requires seven or eight years. Even if we have this material reduction in livestock numbers by the end of the year or soon thereafter, the feed supply per animal unit will be materially smaller than normal, and also 10 to 20 percent smaller than last year when feed supply was short.

It is assumed in the above calculations that the reduction in roughage, other than hay, would be about the same as shown for hay even after allowing for an increase in land planted to forage crops after the drought got under way.

2. Corn and Hogs.

Approximately 1,200,000 corn and hog farmers are participating in the Corn-Hog Program by signing contracts to reduce the number of hogs produced for market in 1934 by at least 25% from the number produced for market in the base period, 1932-33, and to reduce corn acreage by at least 20% from the average acreage planted in 1932 and 1933. The total production represented by these contracts probably makes up between 80 and 85% of the commercial hog supply, and around 70% of the total corn acreage in the United States. Largely as a result of the production control program, corn acreage and hog production is being materially reduced this year. The July crop report of the Department of Agriculture estimates that the acreage of the corn planted this year, amounting to 92,526,000 acres, is 12.3% below that of the base period of the United States as a whole, and 18% less than that of the base period in the North Central States. In addition to the reduction in total corn acreage, the yield per acre will be materially reduced this year as a result of the widespread drought. Based on conditions August 1, the Department estimated the corn crop at about 1,607,000,000 bushels as compared with a five-year average of 2,516,000,000 bushels, and a 1933 production of 2,344,000,000 bushels.

The Government's annual pig survey, made as of June 1, indicated that the 1934 spring pig crop was 27% smaller than the average of the spring crops in 1932 and 1933. It also indicated a prospective decrease of 38% in the number of sows to farrow in the fall season of 1934 from the average number that farrowed in the fall seasons of 1932 and 1933.

Assuming a corn crop of around 1,600,000,000 bushels, the U.S. farm price of corn for the marketing year 1934-35 is likely to average between 75 and 80 cents per bushel. Corn prices are expected to move upward through the winter and early spring, but they may move downward gradually beginning in the spring, depending on weather conditions and prospect for the 1935 crop. Based on the indications of the June pig survey, the farm price of hogs for the marketing year 1934-35 is forecast at \$5.50 per hundred pounds (assuming \$2.25 tax). The farm price during the winter season of 1934-35 is estimated at about \$4.50 per hundred pounds, and for the summer of 1935 it is estimated at around \$6.50 per hundred pounds.

3. Other Feeds and Livestock.

The production of other feed grains and the production of hay and roughage has also been drastically reduced this year as a result of the drought. Pasture conditions are far poorer than in any other August in the last 50 years.

Because of the acute shortage of feed, the livestock industry is faced with an unprecedented liquidation of livestock during the last half of this year. Most of this liquidation will be in cattle and sheep, since hog numbers have already been reduced materially through the Production Control Program, and since the acute shortage of pasture and roughage makes wholesale disposition of cattle and sheep imperative. Although market supplies of well finished grain fed cattle will be small during the remainder of the year, record supplies of grass cattle and sheep will be disposed of either through regular market channels or through Government purchases. Although the many uncertainties and lack of precedent makes the forecasting of cattle and sheep prices extremely hazardous, it has been roughly estimated that the average farm price of cattle during the last half of 1934, if drought purchases don't fall behind and necessitate a rush to market, will be around \$3.00 per hundred pounds as compared with \$3.63 in 1933. The farm price for the calendar year 1935 is forecast at \$4.00 per hundred pounds. The farm price for sheep and lambs during the last half of 1934 is forecast at \$5.25 per hundred pounds, and for the calendar year 1935, the farm price forecast is \$6.75 per hundred pounds. The uncertainties pertaining to sheep and lamb prices in 1935 are equally as great as those pertaining to cattle prices. The Committee's forecasts of the average farm prices of feed grains other than corn for the 1934-35 marketing year are as follows:

Grain Sorghums	65¢ per bushel
Oats	50¢ per bushel
Feed Barley	60¢ per bushel

The U.S. farm price of butterfat for the calendar year 1934 is estimated at 27.9¢ per pound as compared with 19.1¢ per pound in 1933. The forecast for the calendar year 1935 is 26.4¢ per pound, which assumes normal pasture conditions. Based largely on the estimates given above, the farm price of dairy products during 1935 will be about the same as in the pre-war period (1910-1914), whereas farm price prices of hogs and cattle will be about 75 percent of the pre-war average.

The farm price of eggs during the calendar year 1934 is estimated at 15.1¢ per dozen as compared with 15.4¢ per dozen during 1933. The forecast for 1935 is 17.8¢ per dozen.

4. Small Grains.

At the present time there are about 52,000,000 acres under wheat contracts according to preliminary calculations. This area is 79 percent of the average seedings of 66,000,000 acres during the three-year base period (1930-32). It is estimated that the reduction for harvest in 1934 made by contract signers exceeds 8,000,000 acres. It appears likely that total wheat seedings for harvest in 1935 will not vary greatly from the approximately 60,000,000 acres seeded for harvest in 1934 when allowance is made for possible increases by non-cooperating farmers over their average seedings during 1930-32. The Department of Agriculture estimated the winter wheat crop, based on August 1 conditions, at 401,000,000 bushels as compared with 352,000,000 bushels in 1933, and 632,000,000 for the five-year average 1927-31. The spring wheat crop was estimated as of the same date at 90,400,000 bushels as compared with 176,000,000 bushels in 1933, and 254,000,000 bushels for the five-year average. The average farm price of all classes and grades of wheat for the last half of 1934 is estimated at 90¢ per bushel. A somewhat lower price is anticipated for the marketing year 1934-35 if average weather prevails during the winter and spring of 1934-35.

The 1934 rye crop, based on conditions August 1, was estimated at 17,300,000 bushels as compared with 21,200,000 bushels in 1933, and a five-year average (1927-31) of 40,900,000 bushels. The average farm price of rye during the fall of 1934 is expected to be between 65 and 70¢ per bushel.

The flaxseed crop, based on conditions August 1, was estimated at 5,300,000 bushels as compared with 6,800,000 bushels in 1933, and 18,700,000 bushels for the five-year average. The forecast of the average farm price of flaxseed in the fall of 1934 is placed at \$2.00 per bushel. Seasonal advances from now until December are anticipated, after which at least a moderate decline in price probably will occur.

PART II

Factors To Be Considered In Determining
Whether Or Not There Should Be A 1935
Program

Because of the widespread drought, with the resultant shortage in small grains, feed grains, hay and pasture, and the heavy market liquidation of meat animals, the question arises as to whether or not a Production Control Program in 1935 is needed. Prices of all kinds of feeds and grains are advancing sharply as a result of the prospects of curtailed supplies, and prices of such products doubtless will continue to move upward during the remainder of the year. The effect of the drought and short feed supplies on livestock prices will be in the opposite direction except, perhaps, for well finished grain fed steers and lambs. Relatively low prices for livestock are likely to prevail during the remainder of the calendar year, but early in 1935 the period of liquidation should terminate, and reduced supplies of livestock should result in a material price advance. The duration of the period of materially higher livestock prices will be dependent to a considerable degree upon the extent of the liquidation and crop conditions in 1935. However, it will be the latter part of 1936 before material increases in production of livestock could possibly be reflected in larger market supplies. With favorable conditions for corn production in 1935, it is conceivable that in the latter part of that year, a ratio of corn prices to hog prices might prevail which would stimulate breeding for spring farrow in 1936 if no production control program were in effect. Such an increase in production would be reflected in market supplies in the winter of 1936-37.

With a large production of feed crops in 1935 and 1936, material increases in production in cattle and sheep might get under way, but they would not be reflected in material increases in market supplies before 1937 in the case of sheep and lambs, and somewhat later in the case of cattle, due to the length of time required to produce these animals for market. It is conceivable that the disposition of cattle will be so drastic during the next six months that we will go from the top to the bottom of a cattle production cycle in one year, whereas in the past the duration of this phase of the cycle has been seven or eight years.

It should be recognized that the greater the disposition of livestock, as a result of the abnormal condition this year, the greater are the probabilities that within the next year or two the supply of feeds in relation to the supply of livestock to consume it will be abnormally large, thus providing a great incentive for materially increasing livestock production which would carry with it the danger of over-expansion as has characterized the ups and downs of livestock production during the past fifty years. The question to be answered, therefore, is whether or not, in view of these conditions, a plan should be inaugurated in the fall of 1934 to exercise control of crops, livestock, or both for a period of one or more years.

Some of the factors to be considered in answering this question are:

- (1) Production control does not necessarily mean production curtailment. It may involve either increases or decreases, depending upon which is required to adjust supply to market outlets, and to give greatest stability to supplies and prices.
- (2) Although it is apparent that further reduction in feed grains acreage in 1935 as compared with 1934 will not be desirable, it should be recognized that the outlet for feed grains during the coming year will also be reduced because of the sharp reduction in livestock numbers. Therefore, an adjustment between feed supplies and livestock supplies should be a major consideration in the feed-grain production program during 1935. The normal tendency in years following corn crop failures is for farmers to increase materially the acreage of corn in their efforts to build up their reserves, and also as a response to relatively high corn prices. Although very low yields per harvested acre of corn, oats, and wheat will be obtained this year, the most probable average yield per harvested acre for each crop in 1935 is apparently an average yield. The distributions of the average yields of corn following years of (1) very low, (2) low, (3) normal, and (4) high yields from 1867 through 1934 are shown in Table 1. It should be noted (1) that the averages of the four distributions are almost the same, and (2) that both the upper and lower yields in each of the four distributions are about the same. In short, the harvested yield of corn for any given year is apparently not related to the harvested yield in the preceding year. An inspection of the yield data for oats and wheat indicates the same absence of any well defined year-to-year relation. Additional information is needed, however, on this question and the closely related question as to the relation of yields for any given year on the number of acres planted and harvested in the succeeding year.

Therefore, an unrestricted production of feed grains in 1935 probably would result in excessive production unless provisions were made for removing the excess supply in relation to livestock numbers. Placing the excess in storage would be extremely hazardous if it were not made a part of a production control plan.

- (3) The autumn of 1934 provides an opportune time to shift the emphasis of the Agricultural Adjustment Program from crop reduction to increased production of hay and pasture, thereby initiating a long-time program for restoring soil

fertility, putting land back to the use for which it is most adapted, and protecting land from further deterioration by cropping and by abnormal weather conditions, such as erosion and wind blowing.

- (4) Most of the progress made during the past year, if not all, in getting farmers to act collectively in adjusting production, would be lost by abandoning a production control program in 1935. The administrative set-up from Washington down to local control associations would be destroyed as well as the enthusiasm for the work on the part of producers which has been developed during the past year. It would be generally interpreted as a failure of the experiment in agricultural adjustment.
- (5) A 1935 Program would provide farmers with the crop income insurance feature of benefit payments, the value of which has been well illustrated this year.
- (6) It probably would be easier, in spite of the drought, to interest farmers in a sound feed grain-livestock production control program this fall than in the fall of 1935, in view of the probability of high prices for livestock and relatively low prices of feed in the latter period. However, the program would have to be presented from an outlook point of view, rather than from the point of view of the current supply and price situation. This fall we will be faced with a feed shortage rather than a surplus, but looking forward another year, the possibility of another surplus of feed is apparent.
- (7) If the Government gives up production control in 1935 because of the drought, it will be doing exactly what farmers have been urged not to do through the dissemination of outlook information during the last decade. Current prices this fall will be conducive to expansion in corn acreage in 1935, but if production is planned in accordance with prospective future prices rather than current prices, an acreage expansion will not occur.

PART III

The Basis For Determining The Commodities On Which
Allotments And Benefits Should Be Made In A Unified
Grains-Livestock Program In The Future

The basic commodities specified in the Agricultural Adjustment Act in the grains-livestock group are: corn, barley, grain sorghums, wheat, rye, flax, hogs, beef cattle and dairy products. In formulating a unified program to include all of these commodities, the first major problem is that of determining how many of these commodities it is necessary to keep under control by establishing allotments and benefit payments in order to have sufficient control of the group to attain the objectives of the Act. It should be the objective of the 1935 Program to make as great a step forward as possible toward a single form contract with sufficient flexibility to adjust production from year to year, and to maintain a reasonable balance of production between the various commodities. There are several alternative programs to be considered in attempting to attain the above objectives, the more important of which are:

- (1) A control of total acreage of basic crops with no restriction on shifting the small grains to feed crops or vice versa.
- (2) A control of acreage of (a) feed crops and (b) small grains, permitting shifting within each group but not permitting a shifting from one group to another.
- (3) Control of any or all of the basic livestock or livestock products combined to either of the above.
- (4) Control of any or all of the livestock or livestock products with no control of crops.

One of the first questions that needs to be answered in this connection is: "To what extent would livestock production be controlled if there was an effective control of feed grains?" The answer to this question involves a study of the relationship between feed grain production and livestock production in past years, in the aggregate, and by species of livestock and kinds of livestock products.

1. The Relation of Feed Grain Production to the Production of Total Livestock.

The relation between total feed production and the number of grain consuming animal units on farms January 1 from 1898 to date is shown in Figure 1. In order to smooth out the sharp variations in yields from one year to another, feed grain production is shown in terms of three-year moving average, centered on the third year. This device also provides some lag between feed grain production which, of course, actually exists due to the term required to convert feed into production of livestock. It may be noted on this chart that there is considerable similarity in the trends of feed grain production and total livestock production, and during much

of the period a similarity in the short time variations of productions may also be observed. During some of the period there was a rather marked disparity in the variations of feed grain production and livestock production which is due in considerable part to the cyclical character of livestock production. For example, because of the length of time required to increase and decrease cattle production, there is a well defined cycle in production of around sixteen years. Cattle production increases for a period of about eight years and then decreases for a similar length of time. During the period from 1910 to 1914, cattle production was at the bottom phase of a cycle, and this accounts to a considerable degree for the lack of a relation for the disparity of the trends in livestock production and feed grain production during that period. The calculation of the grain consuming animal units assumed that the relationship between the feed requirements of one animal of each species of livestock remained the same during the period. This, of course, was not the case, for there have been marked shifts in the methods and intensity of feeding the various species during the last thirty-five years. It further assumes that the relationship between the livestock produced and fed during the year and the number on farms the first of the year was the same throughout the period, when as a matter of fact, there has been a significant shift in this relationship. For example, during the past fifteen years there has been a marked shift in relationship between hog numbers on January 1 and annual pork production. An accurate statistical correction in these assumptions would be very difficult, but if such corrections were made, the relationship between feed grain production and livestock production over the period would be much more pronounced.

(a) Feed Grain Production And
Hog Production.

There is a close relationship between corn production and hog production over both long and short periods.

The Long-Time Relation

The annual estimated commercial slaughter of hogs in millions of head and a 2-year moving average of United States corn production, excluding an estimated allowance for workstock, are plotted together in Figure 2 for the 55-year period 1880-81 through 1934-35. ^{1/} From 1907-08, commercial slaughter is the same as slaughter under Federal inspection. In both series a marked upward trend is evident. Through the period, however, commercial hog slaughter increased faster than corn production.

^{1/} Since corn represents the major share of the feed grain supply and corn production records are available for a long period of years, the analysis in this section of the report is largely confined to the relation between corn production and livestock production.

This more rapid increase in commercial hog slaughter has been caused almost altogether by a shift from farm to commercial slaughter. Corn acreage, which is an accurate measure of the trend of corn production, increased approximately 36 percent from 1880 to 1930, and the number of hogs on hand on January 1 increased approximately 16 percent from 1890-94 to 1930-34. This increase in hog numbers is well in line with the actual increase in corn production when it is remembered that the number of hogs annually marketed relative to the number on hand on January 1 has also increased.

For a year-to-year measure of change, however, the commercial slaughter series is the best measure available. The 2-year average corn supply (plotted on the second year) has been used, since hog production is influenced by the supply for both the first and second year preceding. In the 55-year period ended in 1930-34, there were nine distinct cycles in the 2-year average corn supply. Each time there has been a corresponding change in hog slaughter. That is, the cyclic changes in hog production can be explained by the cyclic changes in corn production.

The Year-To-Year Relation

Changes in the size of the corn crop due to weather or yield changes do not usually cause any material change in the number of hogs sent to market before the start of the following summer marketing season. That is, a change in the size of the crop to be harvested will become apparent from July to August of the crop year and will affect (1) the number of bred sows marketed in the late summer and the number of sows to farrow in the fall, and (2) the number of sows bred in the fall and the number of sows to farrow the following spring. Three methods may be used to estimate the effect of changes in the size of the corn crop upon changes in the number of hogs to be marketed or slaughtered in the following May through April slaughter year. These are:

(1) The Direct Method: Through the 14-year period, 1919-20 to 1933-34, the year to year changes in the slaughter of hogs under Federal inspection have not been closely related to the size of the corn crop in the preceding year. An average relationship may be established, however, if certain years are excluded. See Figure 3. 1920-21 and 1921-22 followed the war period and were years in which hogs were held back in order to build up the breeding herd, and 1926-27 were a similar year. 1923-24 was a year of excessive liquidation and 1931-32 followed the usual feed grain situation of 1930-31. Stated in terms of averages for the most recent 10-year period, a change of about 1 percent in corn production was followed by a corresponding change of about 1 percent in the number of hogs slaughtered under Federal inspection. There is also some evidence of an effect of a change in the size of the corn crop the second preceding year on changes in slaughter.

(2) The Corn Supply Per Hog Method: A clear cut relation is found between changes in the corn supply per hog in the U.S. and changes in commercial slaughter. In Figure 4 the percentage changes in 2-year moving average supply of corn per hog is charted in the upper half and the year-to-year percentage changes in the commercial slaughter of hogs is charted in the lower half. The corn supply per hog is calculated by dividing the fall corn supply by the number of hogs on hand on the following January 1. With the exception of 1910-11 and 1918-19, the corn supply per hog measure gives a good indication of the changes to be expected in hog slaughter. On the average a change of about 1 percent in the corn supply per hog is associated with a change of about 1 percent in commercial slaughter.

(3) The Hog-Corn Ratio Method: Another clear cut relation is obtained when the hog-corn price ratio is related to the short-time trend of hog marketings. In Figure 5 the hog-corn price ratio is charted in the upper half and a 12-month average of hog slaughter under Federal inspection in the lower half. Without exception every major change in the hog-corn price ratio from 1901 to date has been followed by a corresponding change in commercial hog slaughter. This relation is shown in correlation form in Figure 6 where the year-to-year changes in the May to April slaughter under Federal inspection are related to changes in the hog-corn price ratios for the 15 months preceding. If it is assumed that the elasticities of demand for hogs and corn are both -0.5 , the relationships shown in Figure 5 would indicate that a change of about 1 percent in the size of the corn crop would result in a change of about 1 percent in the number of hogs slaughtered under Federal inspection.

The Weight Relation:

So far we have only been concerned with the number of hogs slaughtered. The average weight per hog is also influenced by the size of the corn crop. An analysis of factors affecting the average weight of hogs slaughtered under Federal inspection in the October through September marketing year is shown in Figure 7. This analysis indicates that a 7 percent change in corn production was associated with the 1 percent change in the weight per hog of hogs marketed through the following year.

Relation Between Commercial Slaughter And Total Slaughter:

It has been assumed that from the several analyses which have preceded are all in terms of commercial slaughter. From 1907 to date, commercial slaughter was equivalent to slaughter under Federal inspection. On the average, total slaughter is about 50 percent greater than inspected slaughter and somewhat less variable. The stable element in total slaughter is apparently a farm slaughter in the Corn Belt of about 7 million head. On the average, local slaughter and wholesale slaughter, other than that under Federal inspection, tend to vary with slaughter under Federal inspection. See Table 4.

(b) Feed-Grain Production and
Beef Cattle Production.

...
The year-to-year changes and the trend in total cattle numbers in the United States are not closely related to the yearly changes and trend in feed grain production, due largely to the importance of pasture and roughage in our national cattle production and to the length of time required to increase and decrease cattle production. However, the total tonnage of beef and veal produced in the Corn Belt, which represents about one-half of the total for the country, is influenced materially by the production and price of feed grains.

Beef cattle and calves normally consume around 190 million bushels of corn and 25 to 35 million bushels of oats and grain sorghums. From the production standpoint, this 215 to 225 million bushels of corn and other feed grains which are chargeable to the production of beef, and to some extent veal, are important.

The relation between changes in corn production and changes in cattle production are indicated in Figures 8 and 9. Corn production in the eight most important corn producing States is compared with the number of choice to good steers sold at Chicago in the following September and October in Figure 8. With the exception of the 1931-32 combination, the relation between the size of the corn crop and the number of steers marketed in the fall is very close. In Figure 9, the adjusted or deflated price of No. 3 yellow corn at Chicago is compared with the net liveweight disappearance of cattle and calves from the North Central States from 1924 through 1933. The inverse relationship is apparent. On the average, after the effect of the cattle cycle has been removed, a change of approximately 3 percent in the adjusted price of corn has been accompanied by a change of about 1 percent in the liveweight production of cattle and calves in the Corn Belt. Or, if the elasticity of demand for corn is -0.5, a change of about 1.5 percent in corn production may be expected to result in a corresponding change of about 1 percent in beef and veal production.

The above analysis is based on past changes in corn production and cattle production where the changes in corn production have been caused by changes in yields rather than in acreage. Will an acreage induced change in production have the same effect as a yield caused change?

The effect should be the same if the acreage taken out of corn production is held idle. But to the extent that the acreage removed from corn production is transferred to hay and pasture production, the effect of the adjustment on cattle production will be lessened. The exact effect on beef production of a considerable shift of the base period acreages of corn and wheat in the North Central States to hay and pasture is uncertain. It does not seem reasonable, however, to expect that the increased acreage of hay and pasture will more than offset the effect of the decreased corn supply since the great bulk of the corn fed to cattle is used to fatten and finish them for market and the rest of the corn and the other feed grains are almost all winter fed.

The range cattle producer would be affected somewhat differently than the Corn Belt producer. If the number of stock cattle in the Corn Belt remained unchanged, the chief concern of the range producer would be centered on the probable change in demand for feeder cattle. Although some reduction in the number of cattle fed in the Corn Belt would probably occur, it is doubtful if such an adjustment will have any measurable effect on the returns to range cattle producers, since (1) any reduction in the total supply of all meat should help to raise or support the price of grass-fat cattle as well as grain fed cattle, and (2) an increased pasture acreage and a smaller grain supply should encourage the Corn Belt farmer to buy stocker and feeder cattle in the spring and summer rather than the fall, and so lessen the burden on the usually overgrazed Western range land.

(c) Feed Grain Production And Dairy Production

Although it is estimated dairy cattle annually consume approximately 200 million bushels of corn and 200 million bushels of oats and barley as grain and the equivalent of another 100 million bushels of corn in the form of silage, the exact relation between changes in grain production and changes in dairy production is difficult to establish.

The trend of dairy production in relation to feed and meat animal production is shown in Figure 10. From 1920 through 1932-33, the general trend of both grain and hay production has been downward. Meat production increased to a peak in 1923-24 and has since moved downward. Through the same period, the quantity of milk used in the production of manufactured dairy products has steadily increased. This increase was, of course, offset in part by a decrease in the farm production of butter and cheese. And, although exact estimates are not available, the quantity of milk used as whole milk and sweet cream increased at a somewhat slower rate from 1920 through 1931.

The physical bases of this steady upward trend in dairy production is indicated in Figure 11 and the economic bases in Figure 12. From 1920 through 1934, the number of horses and mules on farms decreased 36 percent, the number of cattle, other than milk cows, dropped 73 percent of the 1920 level in 1928 and were still 16 percent below 1920 on January 1, 1934. Hog numbers moved slightly downward. Dairy cow numbers tended to move steadily upward and were 21 percent above 1920 on January 1, 1934. In short, the numbers of livestock other than milk cows decreased and thus released large quantities of hay and grain which were accounted for by increases in dairy production and a downward adjustment in feed production. The relative supplies of feed were still further increased by increased efficiency in the feeding of hogs and dairy cattle through the same period.

From the economic standpoint, dairy production was favored or encouraged by (1) high dairy prices relative to feed grain prices from 1921 through 1933, and (2) high dairy prices relative to meat animal prices from 1920 through 1925 and again from 1931 through 1933. This price advantage of dairy products, which was maintained despite a steadily increasing production, as compared to either grain or meat animal prices was so marked throughout the period from 1920 through 1933 that no exact measure of this response of dairy production to changes in the price ratios concerned can be obtained. The greatest relative increases in production, however, occurred in the earlier part of the period when the price advantage was most marked.

Any analysis of the effect of a feed grain program must consider (1) the effect of such a program in the Northeast where the main product is whole milk, and (2) the effect in the Mid-west where the main product is butterfat. In the Northeast approximately 35 pounds of concentrates are fed per hundredweight of milk produced, of which about 80 percent are purchased. Any increase in the average price of feed grains would be reflected in the cost of the purchased feed. On the average, an increase of about 2 percent in average United States farm price of corn should result in an average increase of about 1 to 1.5 percent in the cost of purchased feed in the Northeast. Any material increase in grain prices should result in some restriction of milk production in the Northeast provided an offset were not provided in the form of an increased price for milk.

In the Mid-west approximately 30 pounds of concentrates are fed per hundredweight of milk produced, of which about 20 percent are purchased. The effect of a decrease in grain production on dairy production in this region would depend to a considerable extent on (1) whether the dairymen in question reduced or maintained their grain acreage, and (2) the use to which the retired grain acreage was put. Short grain supplies accompanied by firm prices would be expected to result in a decreased production per cow milked as actually occurred in the winter of 1933-34. If good fall pasturage and a plentiful supply of hay were available, however, total production might be maintained or slightly increased by increasing the number of cows milked. Any material increase, however,

will require some grain as a supplement to the hay and pasture and will mean a smaller production of some other product. In conclusion, it should be noted that dairy cattle have been steadily replacing beef cattle through the past 25 years in the Mid-west, especially during periods of increasing cattle numbers and decreasing cattle prices, and that the trend may be expected to continue so long as dairy products prices maintain their favorable position. But the most reasonable estimate of the net effect of a feed grain program, and an increased hay and pasture acreage, upon dairy production is that Northeastern production might decrease somewhat and Mid-western production increase by about an equal amount so that total production would remain unchanged, assuming that such a program was accompanied by an improved price for hogs and cattle.

(d) Feed Grain Production And Sheep Production

There is very little relationship between production of feed grains and the production of sheep in terms of either numbers or total weight in the United States. This is illustrated in Figure 13 which shows feed grain production, mutton and lamb production, and the number of sheep on farms from 1898 to date. About 65 percent of the United States lamb crop is produced in the Western Sheep States where feed grain production is relatively small, and range, pastures and hay constitutes the bulk of the sheep ration. A large number of lambs from the Western States are shipped from the Western Sheep-producing States to the Middle Western States for feeding each year. However, of the total number of lambs on feed on January 1, around 63 percent are normally located in the Western States (including Nebraska) where feed grains constitute a relatively small proportion of the feed used in fattening lambs for market. In the production of early lambs in the Corn Belt, which has expanded considerably in recent years, there is a significant trend toward creep feeding of grain in order to finish the lambs at an earlier date. Lambs which are shipped into the Corn Belt every autumn for further feeding also receive considerable grain in the fattening process. However, the use of grain in both of the above lamb feeding practices still represents a small proportion of the total feed grain crop, and feed grain still constitutes a small percentage of total feed used in the production of sheep and lambs. It has been estimated that during the period 1924-29 sheep were fed on the average only about 1 percent of the corn produced in the United States.

(e) Feed Grain Production And Poultry Production

Poultry on farms consume around 10 percent of the corn produced in the United States according to recent estimates based on the 5-year

period 1924-29. There is a fairly definite relationship between the feed-egg price ratio and the number of young chickens in farm flocks on June 1. It may be demonstrated also that there is a definite relationship between the feed-egg price ratio and total feed grain production. See Figures 14 and 15.

These two relationships indicate that feed grain production and poultry and egg production are closely related. The number of young chickens raised annually is a good indication of egg production during the following year. The feed-egg price ratio influences to a smaller degree the eggs layed per hen, and determines to some extent whether or not chickens are sold for meat or retained for eggs. These latter considerations, however, are of minor importance as compared with the first.

SUMMARY: THE RELATION BETWEEN FEED-GRAIN PRODUCTION AND LIVESTOCK PRODUCTION

Evidence has been submitted which indicates that a reduction in feed grain production from an average or normal level might be expected to result in an equivalent percentage reduction in hog production, some reduction in the supply of poultry products and grain-fed cattle, and no material change in the production of dairy products, and sheep and lambs from an average level. These estimates assume that the acreage retired from grain will be used for hay and pasture production.

The estimates presented so far have been chiefly based upon statistical analyses of the past record. A somewhat different approach is indicated in Table XI where an "average ration and total feed supply" approach is used. The analysis presented in Table XI indicates that a reduction in feed grain production from average, where the retired acreage is used for hay and pasture, might be expected to result in a slightly more than equivalent percentage reduction in the feed supply for hogs, a slight reduction in the feed supply for horses and mules and poultry, and no material change in the supply of feed for dairy and beef cattle. The actual changes in milk and meat production would be somewhat different from the changes in the available feed supply. Hogs would be fed to lighter weights, somewhat more pasture would be used, and a more efficient utilization of corn obtained. The efficiency of feeding the other classes of livestock should also increase somewhat. On the average, the changes in milk and meat production, indicated by Table XI are in close agreement with those indicated earlier.

Although our conclusion is that a decrease in grain production, and a corresponding increase in hay and pasture, would result in an

equivalent decrease in hog production and no material change in the production of milk and other livestock, it should be noted (1) that it would be several years before the final adjustment would be obtained, and (2) that the decrease in hog production would strengthen the prices of other meats and cooking compounds as well as of pork and lard. The general drought has so affected the present acreage of hay and pasture and the seed supply that it will be several years before the maximum increase in hay and pasture which might result from a grain program would be obtained. As a result, a grain control program would have a more marked effect on beef and dairy production during at least the first two years than indicated above. With some increase in population and a maintained per capita consumption of dairy and meat products, such a gradual adjustment would appear desirable. Any material reduction in hog production from a given level would result not only in increased hog prices, but also in a stronger market for other meats, especially the lower priced cuts of beef, and vegetable-oil shortenings, such as are produced from cottonseed oil. Hog production would, of course, be adjusted to the relative price situation from year-to-year just as in the past.

PART IV

A Unified Production Control Plan
For Grains

The analysis of the relation between feed grains and livestock indicates that a control of feed grain production would control effectively the level of hog production; that it would exercise some control over the production of beef, dairy and poultry products during at least the first two years; and would have very little effect upon the production of sheep. A control of feed grains, therefore, would bring about a controlling influence in the prices of all meat animals due to the effect on the total meat supply and the competition as between meats. Obviously the greatest influence would be in the prices of pork since hog production would be affected the most.

It appears unnecessary to directly control livestock production in 1935. As pointed out elsewhere in this memorandum, the drought and Government purchases of cattle apparently will reduce cattle numbers as much as would be advisable, at least in any one year. Sheep numbers are also likewise subject to drastic liquidation this year. Because of the lower than normal corn-hog ratio which probably will exist during the breeding season for 1935 spring hog production, as a result of high corn prices, it is very unlikely that there will be an increase in hog production in 1935. However, if feed production, in response to the stimulus of high prices, is allowed to go unchecked in 1935, there will be great temptation for producers to expand livestock production as soon as 1935 feed supplies become available. If such feed supplies are held to a desirable level, it should be a relatively easy task to prevent excessive increases.

Other important reasons for not attempting direct control of livestock production through contracts with producers are as follows:

(1) It is difficult to establish satisfactory individual allotments and County or State quotas.

Both theory and experience with the 1934 Program indicate that it is extremely difficult, if not impossible, to establish satisfactory individual contract allotments for livestock or livestock products. Few producers keep accurate records of livestock production or sales. Evidence obtained from market agencies and similar sources frequently is inaccurate or untrustworthy. There is greater opportunity for collusion and corruption. Many points of argument and dissatisfaction arise. Conditions as between producers vary much more than with respect to crop production. It is necessary for the livestock base to be personal rather than go with the land, which greatly complicates determination of the base and makes checking of the individual producer's claims more difficult.

These conditions encourage large overstatement of base production and make absolutely necessary rather severe adjustment of the original contract figures, if real reduction is to be obtained. In the 1934

Corn-Hog Program it was found that corn acreage, which could be checked back from the 1933 stubble, was subject to very little overstatement as compared with hogs. A 25 percent nominal reduction from a livestock base containing 30 percent overstatement (a commonly encountered condition) would result in no actual reduction. In the case of hogs, sufficient check data have been available to make possible the establishment of rather accurate State and County quotas, against which to check the total of individual producers' claims. Check data available in connection with other kinds of livestock or livestock products are much less satisfactory, which would prevent the establishment of County or State quotas for use in eliminating the overstatement from the individual contracts. It may be confidently predicted that without such elimination of overstatement no livestock reduction program would accomplish its objective.

(2) Compliance is very difficult to determine or enforce.

In a crop reduction program checking compliance is merely a matter of measuring acreage, thus limiting compliance activity to one operation in one small area. In a livestock program, any really effective system for checking compliance would involve activity on many fronts, since livestock is easily moved, and because normal death losses make it inadvisable to check compliance on other than a marketed basis. A complete system of licensing slaughtering establishments and of reports therefrom covering purchases of animals from individuals, with certificates following the livestock from producer to packer, would be essential to adequate checking of compliance if prices were rising and livestock production attractive.

(3) Livestock is not well adapted to the rigidity of production control.

If control of crop production had to be based on the number of bushels produced the difficulties encountered would be much greater. Placing the control on acreage avoids many of these difficulties. With livestock, nothing corresponding to acreage, for use as a control point, is available. Only total production for market can be used. Breeding stock, which is somewhat comparable to acreage in crop production, cannot be used satisfactorily as the focal point for livestock control because of several conditions which must be obvious to anyone acquainted with livestock production. As a result, crop acreages may be subjected to rather rigid control much more easily than livestock numbers.

In addition to the foregoing, the relatively long time necessary for the production of livestock makes direct control of production more difficult. This is particularly true of livestock other than hogs. Lapse of much time between the determination of objectives, application of control methods, and accomplishment of final results, together with changing price and other conditions, leads to dissatisfaction on the part of producers and difficulty in attaining the goal.

In view of the above considerations, it is recommended that the grains-livestock program in 1935 and thereafter be confined to a control of production of grains, and that no allotments or benefit payments be made on livestock and livestock products. In 1934 the problem of materially reducing hog production made it necessary to make substantial benefit payments to hog producers as a reward for curtailing their production. Such a reduction as was obtained no doubt could have been realized through a control of feed grains exclusively, but it would have necessitated serious losses to farmers feeding their hogs during 1934 with a very unfavorable ratio between corn prices and hog prices, and without offsetting this loss in any way. If the ratio in future years can be maintained at around the average level, there is little danger of excessive hog production.

A unified grain program could be set up in one of four ways as follows:

1. "A Combined Program" in which the acreage for all six crops (wheat, rye, flax, corn, barley, and grain sorghums) would be considered as a unit and contracted acres would be calculated as a percentage of this combined acreage of these six crops. No restriction would be applied to any of the individual crops.
2. "A Joint Program" which would involve a combined acreage base (a) for the cash small grains (wheat, rye, and flax), and (b) a separate base for the feed grains (corn, barley, and grain sorghums). No restriction would be applied to any of the separate crops in each group, but every contract signer would be required to participate in the adjustment of both cash small grains and feed grains. The limits of reduction for which a producer would receive adjustment payments should be not less than 10 percent and probably not more than 40 percent.
3. "A Joint Option Program" would have practically the same set-up as the "Joint Program" (No. 2) only the producer would have the option of reducing either cash small grain or feed grains or both. If he participated in only one, he would be required not to increase the acreage of the other group of crops.
4. "A Composite Option Program" in which each of the six crops would be handled separately. The producer would be given the option of reducing the acreage of one or more of the six crops, but would be required not to increase his acreage of the other crops that he did not agree to reduce.

The "Combined Program" (No. 1) involves the least control or regimentation of the individual producer, is the simplest program to understand, and the easiest for checking compliance. The contract would specify what the producer would be allowed to do with the contracted acreage. About the only restrictions necessary in regard to the rest of the farm would be (a) to limit the total crop acres planted to the total during the base period and (b) to maintain the hay and forage acreage harvested to the same level as during the base period.

Such a program would not give the control over individual crops that might be desired, but it would reduce the total acreage of these six crops which make the most intensive use of the land. If forage and pasture is permitted on contracted acres, such a program would result in a shift in land utilization from the more intensive to the less intensive crops and would also bring about a building-up of soil fertility.

The two crops which are least likely to be reduced under a "Combined Program" are wheat and corn. If average yields per acre are obtained in 1935 (and that is the most logical expectation now) the production of wheat would be in excess of domestic requirements and, without further marked inflation, it is not likely that wheat prices in the fall of 1935 will be excessively high, but probably will be much lower than at present. An average yield per acre of corn in 1935, even on reduced acreage, would result in a supply of corn well in excess of the feed requirements for the greatly reduced numbers of livestock. It is difficult to say at this time whether the price of either of these crops would be high in relation to the other. This contingency could be guarded against by including in the contract a clause reserving to the Secretary the right to prescribe specific restrictions on either corn or wheat in case the price of one became materially out of line with the other.

"The Joint Program" would afford more specific control than the "Combined Program". By analyzing the feed grains-livestock situation, a reduction in feed grains would be required which would provide the best balance between feed grain supplies and livestock supplies. "The Joint Program" will provide more flexibility to the producer and less complication in administration than the individual commodity approach, but it would be less simple and involve more regimentation of the farmers' activity than a "Combined Program". Obviously the "Joint Program" would permit a more accurate adjustment of production of feed grains and of small grains to their respective outlets than would the "Combined Program". The "Combined Program" would represent almost a complete shift from commodity control to land use program. The principle question is whether or not this complete shift should be made in 1935 or delayed until prices and production of farm products are established in a more normal relationship to each other. For example, the 1934 drought will seriously distort the relationship between feed grains and livestock, and unless production of feed grains as a group is controlled, there is the danger of excessive feed grain production in 1935 and a resulting excessive production of livestock in the succeeding year or two. It should be recognized, however, that under the "Combined Program" more

land could be placed under control for the same expenditure of money than under the "Joint Program" because the freedom from restrictions would give such a simple program greater popular appeal.

One difficulty that might arise in connection with the "Combined Program" would be the claim on the part of wheat growers that the revenue raised by the processing tax on wheat was being used to reduce the acreage of crops other than wheat. Conversely, the hog producer might think that the tax money from hogs was being used to pay for a reduction of crops other than feed grains.

Experience with various programs to date points to the necessity of having a simple program with as few irritating restrictions as possible. Many of the restrictions included in present contracts cannot be checked so far as compliance is concerned. The existence of restrictions on which compliance is not checked is an influence that encourages non-compliance of the more essential features of the contract.

A "Combined Program" or "Joint Program" is much preferable to either of the other two types. There are distinct advantages and disadvantages to both the "Combined Program" and the "Joint Program". Both types are given consideration in the remainder of this report.

1. The Base Period.

A unified contract covering wheat, rye, flax, corn, barley and grain sorghums, either as one group or two groups, should specify the same base period for all crops. A common base period makes it possible for the producer to account for all the land in a specified farm which is very helpful in holding down overstatement in producers' figures of past acreage, and prevents such difficulties as "free acres" that already have arisen in areas where both wheat and corn-hog contracts have been signed by the same producers.

Experience in the wheat program points to the necessity, for certain areas at least, of the base period made up of an even number of years because of the practice of summer fallowing.

The base period should be as recent as possible in order to hold "memory bias" in producers' figures of base acreage and production to a minimum. It has been the experience with practically all adjustment contracts that overstatement has been greatest in years of low yield and crop failure, and especially when such years occur from two to five years previously. Overstatement in hogs produced was usually much smaller for the fall of 1933 pig crop than for the three earlier pig crops.

It is desirable that the base period avoid the inclusion of any year in which either acreage or production was abnormally low. However, insofar as reduced production in any one year is due largely to low

yields per acre rather than to a curtailment of acreage planted, this difficulty may be avoided by making adjustment payments on the basis of appraised yields for contracted acres under average growing conditions rather than the production reported on the contract for a shorter base period.

The year 1934 should not be included because both acreage and yields per acre are abnormally low in rather large areas of the country, and it would give the non-participating producer who increased production in 1934 an advantage over the cooperating producer in that year.

It is recommended, therefore, that a 1932-33 average base period for acreage and a 10-year average yield per acre (1923-32) be used as the base period for a unified contract. Records of the acreage of the various crops were obtained for 1932 and 1933 on both the corn-hog and cotton contracts, and for 1933 on the wheat contracts. All farmers who signed these contracts have copies of their contracts that can be used in filling out the new one. It would be very difficult to obtain a reliable measure of overstatement in the base period acreage figures if a year as remote from the present as 1930 or 1931 were included. Although acreage and production was abnormal for some of these crops in some areas in 1933, the year 1931 was probably more abnormal, taking the country as a whole, because of the drought conditions that prevailed in the western part of the Corn Belt. The year 1930 was also a drought year in Mississippi, Ohio and Potomac Valleys.

The best measure of acres overstatement is obtained by comparing the acreage reported on the contracts with the acreage reported on the rural carrier survey taken in the fall of each year. The more remote the years, the more difficult the programs to get contracts and cards that can be matched.

When all six crops are combined into one acreage base, or even when feed grains and small grains are put in separate groups, inequalities of individual crops as between different areas and States tend to be ironed out somewhat. In case there has been any serious abandonment on winter wheat on land that was allowed to remain idle in any area, some allowance for such abandoned acreage could be made in establishing the quotas.

In using a combined crop acreage base for all six crops, it would be possible to use harvested acres rather than planted. In fact the use of planted acreage would lead to endless comparison in areas where one crop such as wheat is abandoned and another planted to take its place. The fact that compliance could be checked on a harvested base would greatly simplify that problem.

Tables 12 and 13 make it possible to compare the distribution of the acreage of the six crops separately and combined for each of the 4 years, 1930-33, as well as for the 2-year average, 1932-33, the 3-year average, 1930-32 and the 4-year average, 1930-33.

2. Duration of Contract.

It is recommended that if a unified grain program is adopted that the duration of the contract be for three years. Despite the fact that the 1935 production season will undoubtedly be in part one of readjustment from the abnormal conditions imposed by the severe drought during the current season, it seems desirable to extend the period of the contract over three years rather than one year. One of the major objectives of the program would be to initiate a shift to less intensive use through increasing the proportion of total crop land devoted to the production of pasture and hay. Such a plan requires long-time planning on the part of the producer, and it requires more than one year to work out the adjustments contemplated in the program. Because of the abnormal conditions created by the drought, however, the contract would need to provide authority for the Secretary to modify in some measure the extent of the reduction and the use of contracted acres after the first year. The nature of these modifications would depend upon whether or not the "Combined Program" or the "Joint Program" were adopted, and upon current and prospective crop conditions in 1935.

3. Adjustments In Production To Be Required.

(a) "Combined Program"

It is recommended that contract signers be required to reduce their acreage of the six basic grains at least 10 percent below the acreage in the base period, and that they be paid for reducing acreage up to 20 percent of the base period acreage if the producer desires to reduce his acreage by a larger amount. No restrictions shall be placed on the contract signer as to what basic grain crops he reduces. He shall be permitted to grow any of the basic crops within the allotted acreage. The producer shall have the option of (1) retaining his 1935 wheat contract and signing the "Combined Program" contract on the basis of the five other basic crops with the understanding that wheat shall be included in 1936 and 1937; or (2) giving up his present wheat contract and signing the "Combined Program" contract. The Secretary shall reserve the right to change the amount of reduction to be required in 1936 and 1937.

Because of the prospective shortage of feed and seed in 1935, no restrictions shall be placed on the acreage of oats and soy beans during 1935. Any restrictions on these crops appear to be unnecessary and undesirable. In the first place oats are needed as a nurse crop for the increased planting of legume and grass crops. There are some methods of seeding which do not require the nurse crop but the almost universal practice is to use it; and oats is the most important crop for the purpose.

A restriction on oats also seems to be unnecessary because of their fiber content which makes them of limited usefulness as a fattening feed. Their place in rotation is dictated primarily by the necessity of legume-sowing and making the shift from intertilled crops to legumes and grass, and not because of the high value or profitableness of the oats crop itself. There will be, therefore, probably very little motive to increase oats acreage beyond the usual proportion to other crops, except in limited cash oats producing areas.

As a result of the drought, restrictions on oats and soy beans in 1935 seem unwise because of the need which farmers will have for emergency hay crops and early maturing feeds. Furthermore, there is the argument that restrictions on these crops would reduce the degree of flexibility in the farmers' operations, which flexibility is one of the objectives of the new program.

It is recommended that the contract signer be permitted to use the contracted acreage for planting erosion-preventing and soil-improvement crops, such as perennial meadow crops, pasture grasses, and emergency forage crops other than basic commodities.^{2/} He shall also be permitted to designate crop land in old sods as contracted acreage. The use of contracted acreage as fallow shall also be permitted.

There shall be no restrictions as to the uses for pasture and for harvest and sale of hay and seed of pasture and meadow crops, and of emergency hay crops produced on contracted acreage during 1935. Soy beans, field peas, and cow peas shall be considered as emergency forage crops on the contracted acreage if they are cut green for hay. Oats shall be permitted as a nurse crop on contracted acreage if cut green for hay.

These liberalizations in the use of contracted acreage in 1935 will not only help to alleviate the acute shortage in forage during 1935, but will also make the program much more attractive to producers and thereby materially reduce the rent or benefit payment necessary to secure the desired degree of participation in the program. The Secretary shall reserve the right, however, to make a new designation of the crops to be planted on contracted acreage in 1936 and 1937, but with the understanding that such crops as will be permitted on contracted acreage in those areas shall be unrestricted as to use.

^{2/} It would be desirable in any 1935 grain reduction program to avoid the implications of the term "contracted acres". To the many people, this term connotes waste and enforced idleness of food producing facilities. To the farmer, it connotes giving up the use of portions of his land. The term "converted acres", which may be used as an alternative, does not carry these implications, but merely a change in the use of land. To the farmer, being paid for changing the land from one crop to another is likely to call forth greater participation for any given payment, and consumers are not likely to pay much attention to different uses.

(b) "Joint Program"

Under the "Joint Program" it is recommended that contract signers be required to:

- (1) Reduce their acreage of basic feed grains (corn, barley and grain sorghums) by at least 10 percent below the acreage in the base period, 1932-33, and that they be paid for a reduction in such acreage up to 20 percent if they desire to make a larger reduction. The contract signer shall be permitted to grow any of the basic feed grains within the allotted feed grain acreage.
- (2) Reduce his basic small grains (wheat, rye and flax) at least 10 percent. As in the case of feed grains he shall be paid for reducing up to 20 percent if he desires to make the greater reduction, and there shall be no restrictions as to the basic small grains produced within the allotted basic small grain acreage.

The producer with a 1935 wheat contract shall be permitted to accept the "Joint Program" contract in lieu of his wheat contract, but he will not be eligible for a "Joint Program" contract if he chooses to retain his wheat contract. No shifting in acreage between small grains and feed grains within the total allotted acreage shall be permitted.

The provisions with respect to the acreage planted to other feed grains, and the use of contracted acreage shall be the same as that proposed for the "Combined Program."

The program either combined or joint would not have much appeal in deficit areas outside the section that produce a surplus for market because the benefit payment per bushel is not increased in such deficit areas, whereas farm prices are higher. The payment per bushel could be made on the basis of farm price relationships as between States. A 50¢ per bushel corn payment in Iowa would have to be raised to 69¢ in Pennsylvania or to 94¢ in Arizona, if the 14-year post-war average farm price is used. Would it not be better to establish a constant payment per bushel and take the reduction where that payment offers an attractive alternative to farmers?

Nevertheless, the combined program would be attractive in that part of the Wheat Belt that is not in the Corn Belt. No doubt there would be some reduction of feed crops under a combined program even in areas which are preponderantly wheat. The joint program would be less popular in such areas as a farmer would be required to reduce his feed crops if he participated in the wheat program. Some farmers could not do that because they only grow enough feed for work stock and to satisfy the family needs for dairy, poultry, and hog products.

In the Atlantic Coast States it is not likely there would be any larger participation in the combined program than in the wheat program. The combined or joint program would have very little appeal. Neither program would be at all popular in the Cotton States, with the exception of Texas and Oklahoma. Fewer contracts would be signed than was the case with corn-hog contracts as the high payments for hogs would be lacking.

4. Method of Paying Benefits

The same method of making adjustment payments could be used with either the combined or joint program. The primary objective of any method of making benefit payments is to get a reasonably equitable distribution of payments between individuals within a county and as between counties and States. One approach would be to ask the individual contract signer to estimate the productivity of his own contracted acres. The other approach would be to have the community committee, which is elected by contract signers, make an appraisal of the productivity of all the contracted fields in their township. Township averages could be equalized within the county, and county averages of appraised productivity within the State, by the county allotment committees working in cooperation with the State boards of review.

Either approach is subject to bias. We know that an appreciable percentage of individual contract signers would overstate the productivity of their respective contracted fields, whereas some few would be overconscientious and really underestimate for their farms. There is no fair way of equalizing these independent individual appraisals as between farms. Such a system that penalizes the honest farmer and richly rewards the less scrupulous individual, would eventually break down completely. Any adequate basis for checking these appraisals made by each individual farmer would involve the setting up of township appraisal committees to appraise a large proportion of the farms. Difficulties would arise as to whose appraisal was nearer right, the farmer's or the committee's. A very prolific cause of friction can be avoided by having the committee do the work in the first place. Presumably, the committee can make a more equitable appraisal between farms than can be made by the individual producers themselves. Committees may be biased either up or down; but if their appraisal as between individuals is equitable, a pro-rata adjustment on all farms within a township for the purpose of equalizing between townships within a county is perfectly fair. Furthermore, data can be made available that will greatly facilitate the equalization as between townships and as between counties.

The appraisal by committee method should be supplemented, however, by an historical record of the contracted acres such as was obtained in Table No. 3 of the corn-hog contract.

Should the appraisal of productivity of contracted acres on a given farm be made in terms of the average ten-year yield per acre in bushels for each of the six crops in question, or should it be made in terms of the general productivity of the contracted acres for all six crops combined?

The former is not only six times as complicated as the latter, but also involves greater opportunity for argument and dissatisfaction. The

The appraisal of the productivity of the contracted acres in terms of the average productivity of the county would be a comparatively simple procedure that could be handled in three separate steps as follows. Each step expresses in percentage form a definite and understandable relationship. The three relationships are--

- (a) Between the productivity of the contracted field or fields and the productivity of the crop acres normally planted on the individual farm to the crops specified in the program. (Productivity of the crop land of the farm would be equal to 100.)
- (b) Between the productivity of the individual farm and the average farm in the township or community appraised by a given committee. (Productivity of the average farm in the township would be expressed as equal to 100.)
- (c) Between productivity of the average farm in the township and the average farm in the county. (Productivity of the average farm in the county would be expressed as equal to 100.) Census data of yields per acre by minor civil divisions should be re-tabulated from Federal census schedules in order that a quantitative comparison between townships may be made for the several crops in the census year of 1929. Tabulation by townships of corn yield data from table No. 2 of the corn-hog contract would also be helpful.

The combined product of these three percentage figures for a given farm, after having been adjusted for possible bias on the part of the community committee, would give an "Index of Productivity" for that farm as compared with the average productivity for the County.

If practically every farm in a given township were included under a contract, the average relationship between farms under contract and the average productivity of the township--would approximate 100 percent. The less complete the sign-up in a given township, this greater the possibility of having the average farm under contract depart from the average in a township, and the greater the possibility that the average index of selectivity for a township would deviate from 100 percent. A rough check on the committee's appraisal of productivity would be furnished by a question on the application for contract in which the producer would be asked to state whether the field to be contracted to the Secretary was above or below average crop land of the farm. This question on the work sheet of the corn-hog contracts was quite useful in checking between counties or in checking the statements of certain county committees that land under contract was well above the average in corn-producing capacity.

Handling the problem in terms of an abstract concept, such as a percentage figure, really tends to give a much more accurate appraisal than when bushels per acre of a given crop are used as a unit of measure for the productivity of land. These indices of productivity and selectivity are not beyond the comprehension of most committeemen likely to be elected. Similar questions have been used by Crop Estimates for many years with highly comparable results from year to year. The general level of intelligence of committeemen is probably fully as high as is the general level of intelligence of crop correspondents. Objections were raised to the use of the productivity index in connection with the corn-acreage appraisal on the grounds that it was too abstract a concept for committeemen to grasp. Apparently the committeemen had less difficulty in using this index than was anticipated by some of the persons in charge of the program.

County Average Rental Rate:

A county average rental rate could be calculated from the following factors:

- (a) The 10-year average yield per acre for each of the crops included in the program for that county, or in minor producing areas for the crop reporting districts.
- (b) The acreage of the respective crops as reported by the Federal census in 1929 would be used in weighting the 10-year average yields.
- (c) Benefit payments per bushel for each of the crops included would be applied to the production of each of these crops in each county in arriving at a "gross value" for these crops in each county. Their gross value would then be divided by the total acres of these crops in order to obtain an average rental rate for average land in each county.

This method of determining the county average rental rate for land of average productivity for all counties, is a strictly arithmetical procedure based on data already available to the Department of Agriculture. If contract signers generally should designate as contracted acres land of better than average productivity, the average rental rate allowed in that county would be above the rate set for that county. Conversely, the allowed rate would be below the established rate if land of less than average productivity was designated as contracted acres. The following Tables shows how the county average rental rate may be calculated for an average county in Indiana, Kansas, North Dakota, and Iowa.

METHOD USED IN CALCULATING AVERAGE COUNTY RENTAL
RATES OR BENEFIT PAYMENTS

Indiana:

<u>Crops</u>	<u>1929 Acres (1000's)</u> (1)	<u>Percent of Total Acres</u> (2)	<u>10-Year Av. Yield Per Acre</u> (3)	<u>Produc- tion (2 x 3)</u> (4)	<u>Benefit Payments Per Bu.</u> (5)	<u>Gross Value (4 x 5)</u> (6)
Feed--						
Corn.....	3,676	99.1	33.8	3,349.58	\$0.50	\$1,674.79
Barley...	33	.9	20.9	18.81	.40	7.52
Grain Sorghum	x	x	0	0	.30	x
Total...	3,709	100.0				1,682.31

Benefit payments per acre for feed grain
crops \$16.82

Small grains--

Wheat.....	1,533	94.0	16.9	1,588.60	\$1.00	\$1,588.60
Rye	97	6.0	12.4	74.40	.65	48.36
Flax.....	x	x	0	0	1.60	0
Total...	1,630	100.0				1,636.96

Benefit payments per acre for cash small
grains \$16.37

Small grains and feed
crops combined--

Corn.....	3,676	68.9	33.8	2,328.82	\$0.50	1,164.41
Barley.....	33	.6	20.9	12.54	.40	5.02
Grain Sorghum	x	x	0	0	.30	0
Wheat.....	1,533	28.7	16.9	485.03	1.00	485.03
Rye.....	97	1.8	12.4	22.32	.65	14.51
Flax.....	x	x	0	0	1.60	0
Total...	5,339	100.0				1,668.97

Benefit payments per acre for combined
crops \$16.69

METHOD USED IN CALCULATING AVERAGE COUNTY RENTAL
RATE OR BENEFIT PAYMENTS

Kansas:

<u>Crops</u>	<u>1929</u> <u>Acres</u> (1000's) (1)	<u>Percent of 4</u> <u>Total Acres</u> (2)	<u>10-Year Av.</u> <u>Yield Per</u> <u>Acre</u> (3)	<u>Produc-</u> <u>tion</u> (2 x 3) (4)	<u>Benefit</u> <u>Payments</u> <u>Per Bu.</u> (5)	<u>Gross</u> <u>Value</u> (4 x 5) (6)
Feed--						
Corn.....	5,649	81.2	18.6	1,510.7	\$0.50	\$755.35
Barley.....	578	8.3	14.3	118.8	.40	47.52
Grain Sorghum	728	10.5	15.0	157.0	.30	47.10
Total.....	6,955	100.0				849.97

Benefit payments per acre for feed grain
crops \$8.50

Small grains--

Wheat.....	12,081	99.7	13.6	1,356.2	\$1.00	\$1,356.20
Rye.....	14	.1	10.9	1.3	.65	.84
Flax.....	20	.2	6.2	1.0	1.60	1.60
Total.....	12,115	100.0				1,358.64

Benefit payments per acre for cash small
grains..... \$13.59

Small grains and
Feed Crops Combined--

Corn.....	5,649	29.6	18.6	551.0	\$0.50	\$275.50
Barley.....	578	3.0	14.3	43.3	.40	17.32
Grain Sorghum	728	3.8	15.0	57.3	.30	17.19
Wheat.....	12,081	63.4	13.6	861.6	1.00	861.60
Rye.....	14	.1	10.9	.8	.65	.52
Flax.....	20	.1	6.2	.7	1.60	1.12
Total.....	19,070	100.0				1,173.25

Benefit payments per acre for combined
crops \$11.73

METHOD USED IN CALCULATING AVERAGE COUNTY RENTAL
RATES OR BENEFIT PAYMENTS

North Dakota:

	<u>1929</u> <u>Acres</u> (1000's) (1)	<u>Percent of</u> <u>Total Acres</u> (2)	<u>10-Year Av.</u> <u>Yield Per</u> <u>Acre</u> (3)	<u>Produc-</u> <u>tion</u> (2 x 3) (4)	<u>Benefit</u> <u>Payments</u> <u>Per Bu.</u> (5)	<u>Gross</u> <u>Value</u> (4 x 5) (6)
Feed --						
Corn.....	138	4.6	19.2	89.1	\$0.50	\$44.55
Barley.....	2,835	95.4	17.0	1,621.1	.40	648.44
Grain Sorghum	x	x	0	0	.30	0
Total.....	2,973	100.0				692.99

Benefit payments per acre for feed grain
crops..... \$6.93

Small grains--

Wheat.....	9,969	81.3	11.2	910.9	\$1.00	\$910.90
Rye.....	949	7.7	11.3	87.5	.65	56.88
Flax.....	1,339	10.9	6.6	72.1	1.60	115.36
Total.....	12,257	100.0				1,083.14

Benefit payments per acre for cash small
grains..... \$10.83

Small grains and feed
crops combined--

Corn.....	138	.9	19.2	17.4	\$0.50	\$8.70
Barley.....	2,835	18.6	17.0	316.5	.40	126.60
Grain Sorghum	x	x	0	0	.30	0
Wheat.....	9,969	65.5	11.2	733.1	1.00	733.10
Rye.....	949	6.2	11.3	70.4	.65	45.76
Flax.....	1,339	8.8	6.6	58.0	1.60	92.80
Total.....	15,230	100.0				1,007.96

Benefit payments per acre for combined
crops..... \$10.08

METHOD USED IN CALCULATING AVERAGE COUNTY RENTAL
RATES OR BENEFIT PAYMENTS

Iowa:

	<u>1929</u> <u>Acres</u> (1,000's) (1)	<u>Percent of</u> <u>Total Acres</u> (2)	<u>10-Year Av.</u> <u>Yield Per</u> <u>Acre</u> (3)	<u>Produc-</u> <u>tion</u> (2 x 3) (4)	<u>Benefit</u> <u>Payments</u> <u>Per Bu.</u> (5)	<u>Gross</u> <u>Value</u> (4 x 5) (6)
Feed--						
Corn.....	9,684	94.2	37.7	3,551.34	\$0.50	\$1,775.67
Barley.....	601	5.8	27.7	160.66	.40	64.26
Grain Sorghum	x	0	0	0	.30	0
Total.....	10,285	100.0				1,839.93

Benefit payments per acre for feed grain
crops..... \$18.40

Small grains--

Wheat.....	421	87.9	19.5	1,714.05	\$1.00	\$1,714.05
Rye.....	45	9.4	16.1	151.34	.65	98.37
Flax.....	13	2.7	9.9	26.73	1.60	42.77
Total.....	479	100.0				1,855.19

Benefit payments per acre for cash small
grains..... \$18.55

Small grains and
Feed Crops Combined--

Corn.....	9,684	90.0	37.7	3,393.00	\$0.50	1,696.50
Barley.....	601	5.6	27.7	155.12	.40	62.05
Grain Sorghum	x	x	x	x	.30	x
Wheat.....	421	3.9	19.5	76.05	1.00	76.05
Rye.....	45	.4	16.1	6.44	.65	4.19
Flax.....	13	.1	9.9	.99	1.60	1.58
Total.....	10,764	100.0				1,840.37

Benefit payments per acre for combined
crops..... \$18.40

RATE OF BENEFIT PAYMENTS PER BUSHEL IN 1935

In calculating the benefit payment rate per acre, a rate of 50¢ per bushel for corn and \$1.00 per bushel for wheat was taken. In determining the rate of 40¢ for barley and 30¢ for grain sorghum, two basic factors were taken into consideration; relative feeding value per bushel and the average relationship between the farm prices of barley and corn, and grain sorghum and corn. In determining the rate of 65¢ for rye and \$1.60 for flax, the average post-war farm-price relationship between these two commodities and wheat was used.

It is difficult to say at the present time just what rate of benefit payment should be used in 1935, 1936, or 1937. It must be sufficiently high to appeal to the farmer or the program fails. On the other hand, there is the difficulty of making benefit payments for feed grain from the sources of revenue available. Experience with wheat indicates that even very liberal benefit payments of around \$1.50 for each bushel not produced do not get full participation. Participation was only 72% in an important wheat State such as Nebraska.

The Bankhead Act appeared to be necessary with cotton largely because the adjustment payments were not sufficiently attractive. It was the very liberal hog payments of \$15 per head for each hog not produced that made it possible to get corn acreage signed up on the corn-hog contracts. The rental rate of 30¢ per bushel would not have proven sufficiently attractive by itself, with the farm price 40¢ or a little better.

The more liberal provisions regarding the use that can be made of the contracted or converted acres will help to make the 1935 program more popular with farmers. If the combined program is used with its minimum amount of restraint on the land not under contract, the benefit payment would not need to be as high as would be the case were the joint program with its greater restrictions adopted. Both of these factors, however, would be more than offset by the fact that feed supplies are extremely short this season as a result of the drought, that prices of feed crops are rising, and that farmers normally increase their corn acreage rather substantially in years following short corn crops. See the following table:

Corn: Production in short-crop years and acreage in succeeding years

Year	Corn production	Percentage of previous year's crop	Acreage in following year	Increase in acreage in following year	Increase in production in following year
	<u>1,000 bushels</u>	<u>Percent</u>	<u>1,000 acres</u>	<u>Percent</u>	<u>Percent</u>
1869	782,084	85.0	38,408	7.1	43.8
1873	1,008,328	78.8	47,686	8.1	10.5
1881	1,244,726	72.9	66,157	4.7	14.1
1886	1,782,748	86.6	73,296	- 0.8	- 10.0
1890	1,650,446	71.9	78,855	5.4	41.5
1894	1,615,016	85.0	90,479	13.0	56.9
1901	1,715,752	64.5	97,177	2.9	61.7
1913	2,272,540	77.1	97,796	- 2.4	11.1
1924	2,298,071	79.9	101,331	0.9	24.2
1930	2,065,273	81.5	105,948	4.8	25.3
1934					

Division of Statistical and Historical Research.

There is really some doubt as to whether a program to reduce feed crop acres would have sufficient appeal to be successful unless the benefit payments actually exceeded the value of the feed crops which the individual farmer might reasonably well expect to produce on the contracted acres. One way of meeting this hazard is to provide rather wide limits of reduction for farmers participating in the program, say a minimum reduction of 10 percent or a maximum of perhaps 40 or 50 percent. There does remain, however, the question as to whether a feed crop adjustment program can be made sufficiently attractive to insure success without having it coupled with hog reduction benefits which can be placed on an attractive basis.

Adjustment of Benefit Payments on Basis of Individual Farmer's Base Acreages of the Several Crops:

It would be possible, however, to adjust the benefit payment per acre in line with the relative acreage of the several crops during the base period as a basis for the first installment that should be made in March of the season in question. The acreages for the respective crops on a given farm could be converted into weights that would total 100. These weights could then be applied to the respective per bushel benefit payments for the several crops in order to obtain a weighted average benefit payment for the individual contract signer. The county acreages for the several crops (from the 1929 Census used as weights in calculating the average rental rate for land of average productivity) could then be used to calculate a weighted average benefit payment for the county. The individual rate per bushel, expressed as a ratio or percentage of the county average rate, could then be used as an adjustment factor that would be applied to the rental rate per acre calculated from the original set-up described in this memorandum.

To carry this method through to a point where the first payment can be made, let us take a county where the average benefit payment per acre for land of average productivity is \$15.00.

Farmer A:

- | | |
|---|----------------------|
| 1. Relationship of productivity of contracted field to productivity of land on the farm used to produce these crops | <u>Percent</u>
90 |
| 2. Relationship of productivity of farm to average productivity of township | 105 |
| 3. Relationship of productivity of township to average productivity of the county | 110 |

Then the rental rate per acre for contracted acres on this farm would be calculated as follows: $\$15.00 \times .90 \times 1.05 \times 1.10 = \15.59 .

If the adjustment factor which allows for the make-up of the base period average was 80% for farmer A, his rental rate would be $.80 \times \$15.59$ or $\$12.47$. For farmer B who grew the greater relative acreage of the crop receiving the larger benefit payments per bushels, with an adjustment factor of say 100%, would receive $1.00 \times \$15.59$ or $\$15.59$ for land having the same productivity as farmer A's. This last adjustment factor could be figured by a tabulating clerk, thereby relieving the local committee of semi-technical work.

Payment for Actual Reduction Made Under the
Combined Program

There is a much greater possibility of shifts being made between the six crops included in the combined program than between the three crops included in each of the groups in the joint program. A large percentage of the corn acreage of the United States is grown in areas where it is at least potentially competitive with wheat. In Minnesota and the Dakotas wheat and barley are alternative crops. Should the price of wheat become substantially out of line with feed grain prices, contract signers in these areas might well make their entire reduction in feed grain acreage which would result in little or no reduction of wheat acreage under the combined plan. A greater shift could be made from feed crops to wheat from the relative acreages of the several crops during 1932-33 than could be made from wheat to feed crops. During the war there was a tremendous increase in wheat acreage and production in the Corn Belt States from Iowa eastward.

These shifts that might take place under the combined program could be prevented largely by the simple expedient of making the benefit payment to the individual farmer on the basis of the reduction that he actually makes with specific crops. No attempt would be made to tell him what adjustment to make, nor would he be asked to indicate the acreages of the crops that he intends to grow when he signs the contract. The actual amount of his final payment would be determined only after compliance had become a matter of record. His first payment could be equal to 40 or 50 percent of the amount indicated by the method of calculating payments already described. His total payment could be calculated on the basis of the shifts actually made, and his final or second payment would be the total payment less the first payment. The following table shows how much greater the benefit payment would be on the same farm when the reduction is taken in feed crops rather than in wheat.

North Dakota ConditionShifts in Crops A:

Crop	Base Acreage	1936 Acreage	Change	County 10-Yr. Av. Yield	(3 x 4)	Rental Payments	Increase (5 x 6)	Decrease (5 x 6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wheat...	50	100	+ 50	11	+ 550	\$1.00	550	---
Rye.....	50	0	- 50	10	- 500	.65	---	325
Flax.....	20	10	- 10	7	- 70	1.60	---	112
Corn.....	50	30	- 20	20	- 400	.50	---	200
Barley..	30	20	- 10	17	- 170	.40	---	68
Grain Sor	0							
Total.	200	160	- 40				550	705 550 155

Index of Productivity county basis for this farm equals..... .90

Total Benefit Payment..... \$139.50

155 ÷ 40 = \$3.875 per acre basis county average productivity
.90 productivity

3.48750 for farm with 90% productivity

40
 \$139.50200 Total

Shifts in Crops B:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wheat...	50	20	- 30	11	- 330	\$ 1.00	---	330
Rye.....	50	20	- 30	10	- 300	.65	---	195
Flax.....	20	10	- 10	7	- 70	1.60	---	112
Corn.....	50	80	30	20	+ 600	.50	300	---
Barley..	30	30	0	17	0	.40	---	---
Grain Sor	0							
Total	200	160	- 40				300	637 300 337

Index of Productivity county basis for this farm..... .90

Total Benefit Payments..... \$ 303.30

303.30 ÷ 40 = \$7.58 rate per acre with 90% productivity.

5. Method of Determining Contracted Acreage Quotas

State Contract Quotas:

Experience with the various adjustment programs to date leads us to believe that acreage quotas or allotments should be made primarily for contract signers. Much useless argument about accuracy of estimates, etc. is avoided and instructions to State and county committees can be made very simple and direct. For example, "The 100,000 total corn acres claimed by contract signers in your county must be reduced to 97,000 acres before contracts from a given county can be approved by the State Board of Review. This reduction is necessary because of a small percentage of overstatement in the figures as originally submitted by producers in filling out their contracts."

Available estimates made by the Division of Crop and Livestock Estimates may be used as one of the indications of the State quota for contract signers. This approach requires an estimate of the acreage for the crop or crops in question not covered by contracts--an estimate of incompleteness. Basic data from individual farmers already collected by Crop Estimates can also be used in making a direct comparison with acreage report on the contracts. This sample comparison of "matched reports" has been found to be a good measure of overstatement in the producers' figures in the case of both corn acreage and hog numbers. A combination of these two methods also may be used.

The three methods of establishing State contract quotas for the acreage of a given crop may be summarized as follows:

- (1) - State Estimate Method: One indication of the State quota of the acreage of a particular crop for contract signers is obtained by subtracting from the State estimate the combined acreage of that crop reported by non-contract signers plus an estimate of the acreage not covered by data either from contract signers or non-contract signers.
- (2) - Identical Comparison of Contracts with Check Data: A second indication of a contract quota is obtained by making a direct comparison of acreage data reported by contract signers on their contracts with the acreage for the same crops in the same year as reported on the rural carrier acreage survey and/or the State farm census of acreage. (Adjustment payments are not a consideration when the farmer reports his crop acreage on the rural carrier card or on the State farm census.) This comparison of matched reports gives a direct measure of overstatement in the contracted acreage. If the acreage as reported on the contracts is adjusted for this measure of overstatement, an indication of the State contract quota is thereby established.

- (3) - Combination Method: A third indication of the State contract quota for acreage may be calculated by using the "identical comparison" as a means of adjusting for overstatement for the year in which overstatement is smallest and then using the relationship of the official estimates of acreage as between the two years for determining the contract quota for the other year or years included in the base period. This method minimizes the error in measuring overstatement by using the year in which overstatement is the smallest for establishing a level of acreage, whereas the relationship shown by the official estimates of acreage for the different years is used to determine the quotas for these other years. This procedure is basic for all crop estimating work in that annual estimates are made from year to year by making an estimate of change between the current year and the previous year and between the present year and the census year.

Each of these three methods has limitations. With the first method there is the possibility of error in the official estimate, and also the difficulty of estimating the incompleteness of contract and non-contract data. Furthermore, it is necessary to measure any tendency toward bias either plus or minus in the reports of non-contract signers. This measurement of bias in non-contract signers' acreage is made in the same way as the measurement of overstatement in contract data mentioned in "2" above. If the first method is the only one used in determining contract quotas, the Agricultural Adjustment Administration is placed in the position of defending the official estimates of the Department of Agriculture. When the three methods are used as a basis for establishing the State quotas, there is less need for defending the official estimates as they are being used only as one indication.

The second method involves the use of a sample to represent the whole. This sample is subject to all the limitations of sample, such as size of sample, dispersion, selectivity, and bias.

The third method is subject to less criticism than either of the other two. The possible error in measuring overstatement is held to a minimum by using that year for comparison in which overstatement is the least. The official estimates are more accurate on a relative base than an absolute base because of the fact that they are tied to a census year base acreage, and are subject to the same incompleteness as the census enumeration.

County Contract Quotas:

In States where a State Farm Census of crop acreage is taken each year by the local assessors, county estimates are generally quite reliable. In such States the same three-fold approach used in establishing State contract quotas also is applicable in making county quotas of acreage. Where county estimates based on a State Farm Census enumeration are not available, only the second approach---"The Identical Comparison of Contracts with Check Data"---can be used.

In establishing county contract quotas by the second method, it is necessary first to measure the overstatement by crop reporting districts within a State. The number of contracts that can be matched with the rural carrier data is sufficiently large for a crop reporting district containing from 4 or five to possibly 15 or 20 counties, depending on the State, to render the indication of overstatement statistically significant.

In many of the more important producing counties, the sample of identicals is sufficiently large to give stability to the measure of overstatement by counties. Rather careful editing of the county sample is absolutely essential, although the editing frequently results in little change in the county average.

In the less important producing counties for any crop, it is in some cases necessary to use for each county the overstatement indicated for the crop reporting district. But usually some departure from the district average appears justified, for some of the counties at least.

In arriving at an indication of overstatement, an identical comparison can be made with data submitted by the producer on other contracts. Corn acreage on the corn contracts was compared with the corn acreage reported on the wheat contracts for 1933 and on the cotton contracts for both 1932 and 1933.

The judgment of the field workers who have been supervising the carrying out of the Program in the various counties should also be taken into consideration in arriving at the degree of overstatement that is to be adopted by the Board of Review for any given county. In the case of the Corn-Hog Program in several States, these workers were asked to classify the counties with which they were familiar as to whether overstatement was likely to be (1) equal to the average for the crop reporting district; (2) above the average or (3) below the average. When several workers agreed that a particular county belonged in one of these three groups, their judgment was considered along with the identical comparison for that county.

6. METHOD OF FINANCING PROGRAM

One of the most difficult problems to be solved in connection with a unified program for 1935 is the financial problem. A financial statement with respect to the current corn-hog and wheat programs is presented in Table 14. This statement indicates that the combined budget for the two programs will just about balance at the end of the 1934-35 tax period. This balance was made possible by an allocation of \$41,200,000 of "other available funds" to the corn-hog budget.

The estimated cost of a joint program for 1935 is based upon the assumption of a sign-up for a 10 per cent reduction from the 1932-33 production of feed grains and a 11.5 per cent reduction in wheat, rye, and flaxseed from a modified 1932-33 production. The rate of benefit payments are as high as could be financed. The estimated costs are:

265 million bu. corn	at 50 cents per bushel	=	\$132,500,000
25 " " barley	" 40 " " "	=	10,000,000
10 " " Gr. sorghum	" 30 " " "	=	3,000,000
100 " " wheat	" 100 " " "	=	100,000,000
2 " " flaxseed	" 160 " " "	=	3,200,000
5 " " rye	" 65 " " "	=	3,250,000

Total benefit payments \$251,950,000

An estimated administrative expense of approximately \$10,000,000 would bring the total cost to approximately \$262,000,000.

The processing taxes necessary to raise \$262,000,000 are shown under Tax Program No. 2, in Table 15. Under this schedule the tax on hogs is placed at \$1.25 and the tax on beef cattle at \$0.35 per live hundredweight. Under Program No. 1 the estimated revenue from a tax schedule with hogs at \$1.00 and cattle at \$0.25 per live hundredweight is shown. Such a tax program would have to be supplemented by an outside appropriation of about \$30,000,000.

It may be desirable to consider reducing the processing tax on hogs from \$2.25 to \$1.50 per live hundredweight in the fall or winter of 1934-35, and continuing this rate through 1935-36. Farmers should be allowed to maintain hog production in 1935 as compared with 1934. The hog-corn ratio would be more favorable to hog production in the winter of 1934-35, to the extent that the reduction in the tax was reflected in hog prices, and the reverse situation would obtain in the winter of 1935-36 when the control of hog production may again be a major problem.

It is assumed that hogs and cattle can be taxed for a feed grain program without benefit payments to livestock producers as such. There is a legal question as to whether such a tax program can be imposed. The argument as to the direct relation between changes in corn production and changes in hog production is strong and is generally admitted. For beef cattle, however, the relation is not so direct. An additional argument, and a strong one, for a tax on beef cattle is the compensating argument. Although it is doubtful if a processing tax on beef cattle would directly affect either the retail price or the consumption of beef, any shortage in the meat supply which is caused by a reduction in pork production should tend to increase the demand for and raise the price of beef. Since the hog program has resulted in a reduction in potential pork production and strengthened the livestock and meat market since the winter of 1933-34, it would seem that the price benefit which has accrued to beef cattle should be subject to a compensating tax to help support the feed control program. A tax on beef cattle would have to be levied at the start of the marketing year which would be defined as July 1st.

It is also assumed that the present tax of 5 cents per bushel on corn can be doubled. Although a tax of 20 cents per bushel was originally considered for processed corn in 1933-34, the actual rate was fixed at 5 cents per bushel. This rate has not been raised and it is doubtful whether it can be raised in view of the competition which

corn processors are subjected to, from such commodities as tapioca and cane or beet sugar, the present price situation with reference to corn, and the length of time which the 5 cents per bushel tax has been allowed to continue. The tax on corn may control in part the tax which can be placed on barley for malt.

So far, we have considered the budget problem from the standpoint of a single year, 1935-36. Were it possible to write a 3 year contract with benefit payments per bushel or per acre for the second and third years only 75 per cent of those offered the first year, the tax problem would be simplified since processing tax revenues for three years could be balanced against adjustment costs for the same period. On the revenue side, it is probable that the supply of hogs and the quantity subject to the processing tax will be about 20 per cent greater in 1936-37 and again in 1937-38 than the estimated supply and taxable quantity for 1935-36. It is doubtful if the taxable utilization or production of the other commodities will be much increased.

Under the assumption that benefit payments per bushel of grain in 1936 and 1937 are to be made at 75 per cent of the rates proposed for 1935, and that tax schedule No. 1 will be used, the estimated costs and revenue for a 3-year joint program are:

Benefit Payments:	First Year	=	\$251,950,000
	Second Year	=	188,962,500
	Third Year	=	188,962,500
Administrative Expense		=	25,125,000
Total Cost		=	655,000,000
Processing Taxes:	First Year	=	232,650,000
	Second Year	=	247,950,000
	Third Year	=	247,950,000
Total Revenue		=	728,550,000

Such a budget arrangement will give a revenue surplus of approximately 10 per cent which could be used to increase the rate of benefit payments per acre or per bushel or to rent an additional acreage. Whether the benefit payments the second and third year could be set at 75 per cent of those proposed for 1935 is doubtful. The 50 cents per bushel rate for corn might not seem very attractive in the fall and winter of 1934. If the feed grain rate was continued in 1936 and 1937 at the same rate as proposed for 1934 the estimated cost of the 3-year program would be increased by \$72,750,000 and would offset the additional revenue. If, on the other hand, the small grain payments were maintained at the proposed 1934 level and the feed grain payments were kept at 75 per cent the increased cost would be \$52,425,000.

7. Farm Storage As A Part of the Adjustment Program.

The Need for a Storage Program. A storage program is needed as a part of any permanent agricultural adjustment program since:

- (a) Agricultural Adjustment programs must be based on the assumption of normal yields since we are not able to predict year to year changes in weather. The farmer, therefore, should be enabled to carry a portion of the production obtained at a high yield forward to offset the deficit which will result from a low yield in order that the physical supply of foodstuffs, such as wheat and livestock for slaughter, be stabilized.
- (b) From the price standpoint it is also important that the supply of the major farm products moving to market should be stabilized. Neither the farmer nor the general public, for example, obtains a permanent gain from inefficient production and wasteful marketing brought about by surplus production, or from a forced liquidation of livestock brought about by a short supply of feed. Such uncontrolled variations in the price system can only result in continued maladjustment of production to the effective demand and to considerable extent inefficient production.
- (c) National production is more generally in line with domestic consumption as a result of crop acreage reduction brought about by the Agricultural Adjustment Administration to compensate for the decline in export demand. So long as we produced large quantities of meat and grain for export any considerable shortage for domestic needs could easily be obtained by a diversion of a portion of the supply designed for export. If acreage and production are reduced, this margin of safety is also reduced or destroyed.
- (d) It might not be possible to import supplies of either wheat or feed grains at a reasonable price if we cut acreage and depended upon foreign production in case of a short crop. It is doubtful if the total cost of low-priced domestic wheat together with storage over a period would exceed the cost of the imported wheat in a short crop year, and, since the foreign production of surplus feed grains is not large, it would also cost more to import what was needed than to depend upon a national storage program.

Commodities and Amounts to be Stored.

Wheat, corn, oats, cotton and meat are the commodities for which storage programs have been considered. The maintenance of the wheat supply from the standpoint of the national diet is of course desirable, and the maintenance of the feed supply for livestock is equally desirable.

It is doubtful if a storage plan for oats is necessary since corn is the dominant feed grain. Although a storage program may be advisable for cotton, this is not a commodity in which we are interested in this report. In case of meat, a stabilization of the feed supply will tend to stabilize both the number of livestock and the annual production of meat. This, together with the fact that meat cannot be stored so easily as grain, makes meat storage inadvisable as a part of a permanent storage plan. (In the winter of 1934-35, however, meat storage is advisable as an emergency measure.)

The amount of the several commodities to be stored will, of course, depend on the variations in yields of the particular commodity in question and the degree of security that is desired.

Wheat yields on harvested acres in the United States from 1866 through 1934 have varied from a low of 11 bushels to a high of 16 bushels per acre. On a seeded acreage basis yields over the last 15-year period have varied from 8 to 14 bushels and have averaged about 12 bushels per acre. Carry-over of 100 million bushels have been considered normal from 1921 through 1930. But if wheat acreage is to be reduced by enough to compensate the loss in foreign markets it would appear that a total carry-over of 200 to 250 million bushels would be desirable. Of this amount about 50 to 100 million bushels might be allowed to accumulate in commercial storage and the other 100 to 200 million bushels in Government storage. Such a carry-over will provide an adequate safeguard against a very low yield for one year and a yield of one or two bushels below average a second year. The chance of obtaining two very low yields in succession is small.

Corn yields per harvested crop acre in the United States from 1866 through 1934 have varied from a low of 18 to a high of 32 bushels, and has averaged about 26 bushels per acre. Since 1919 the estimated carry-over of old corn on October 1st has ranged from 88 to 407 million bushels. A carry-over of not more than 350 to 400 million bushels would appear desirable in years of high yield. As in the case of wheat, a portion of this carry-over should accumulate in private or commercial storage. Such a carry-over would provide an adequate safeguard against a very low yield for one year and a yield one or two bushels below average the second year. The chance of obtaining two very low yields in succession is small.

Where to Store.

Corn should be stored on the farm. Farm storage with the farmer retaining title is desirable because it keeps the surplus problem constantly in the mind of the individual producer and because it also gives the individual producer the benefit of any price rise which may result from carrying the grain of surplus years into years of adjusted production. The farm storage of corn is feasible as was demonstrated this last season. In the case of wheat proper facilities for farm storage are not available and it is doubtful if farm storage is advisable. Storage in local elevators might be utilized under some rental arrangement whereby the farmer can retain title and the release can be provided for under Government supervision. Location of the stored stocks should

also be regionalized as much as possible in order that the storage stocks may be released with the minimum amount of shipment.

Financing and Administration.

The financial and administrative features of the farm storage program are suggested by those which were used last season in connection with cotton and corn. It would seem, however, that a more efficient and more stabilized type of operation could be obtained if the Commodity Credit Corporation were detached from the Reconstruction Finance Corporation, and given an independent capitalization. Funds for new loans will not be available from the Reconstruction Finance Corporation after January 1935, unless this privilege is extended by Congress. As a separate unit coordinated with the Agricultural Adjustment Administration, the Commodity Credit Corporation might need a capital of \$100,000,000. With such an organization, acceptances could be issued against commodity loans and readily marketed to the extent of several times the capital. Provision could be made for interior banks or other loan agencies to participate in the general storage program.

An effort should also be made to coordinate the requirements of the national storage program with existing state warehouse laws since such a coordination would reduce the cost of administration and widen the application of the program.

The loan value of the several commodities to be stored should be determined on a somewhat different basis from that used in the fall of 1933. In general the loan value per unit should be less than the normal market value in years of short crops and high prices and something more than the normal market values in the years of surplus production. Such a policy should tend to stabilize feed prices in relation to livestock prices and as a result tend to stabilize livestock production. Every effort should be made to forecast the price that will prevail when the storage supplies are released and the loan price should not exceed the prices in prospect. Interest and carrying charges should be borne by the producer rather than by the Administration.

Method of Release and Tie-up With Adjustment Program.

Adequate provision should be made for releasing the stored grain in order that grain consumption and price may be stabilized. It would be desirable, first, to require that every person obtaining a commodity loan under the program should agree to reduce acreage by not to exceed some maximum percentage in the following year if it were deemed advisable by the Secretary, and second, to provide for a partial release of the storage supplies on any farm at such times as might seem desirable. The acreage control requirement is, of course, necessary to safeguard the capital of the Commodity Credit Corporation. General objectives of any farm storage program should be made public since it is essential that the grain market should be affected as little as possible by the Administration.

Recommendations for 1935.

No storage program is recommended for the fall of 1934 since grain crops are so short and since grain prices should be relatively high for the 1934-35 season. It is recommended, however, that provision for a farm storage program be made in connection with the 1935 acreage adjustment program. This can be done by the inclusion in any acreage contract which the Administration may offer of a clause which will make the applicant eligible to a loan in the fall of 1935 on a value basis to be determined and announced for wheat by about June 15th and for corn about September 1, 1935. Assuming average yields in 1935 it may be desirable to provide for the storage, under Government seal, of 125 to 150 million bushels of wheat and of as much as 350 million bushels of corn. Any loan program should, of course, be flexible enough to absorb smaller or larger quantities, dependent upon the size of the crop.

Steps should be taken to detach the Commodity Credit Corporation from the Reconstruction Finance Corporation and bring it into closer relation with the Agricultural Adjustment Administration in order to make possible the inauguration of a permanent storage program for corn, wheat, and cotton.

PART V

A Proposed Corn Program To Be Used In Lieu Of
A Unified Grain Program In 1935

The committee has set forth in the foregoing pages its recommendations regarding a unified grain program for 1935, for possible use if it is finally decided that a unified grain program should be inaugurated at this time. It is the general consensus of opinion of the committee, however, that in view of the abnormal crop situation created by the drought, and the difficulties to be encountered in developing a unified 1935 Program within the limited time available, that the grain production adjustment program in 1935 should include only (1) a one-year program on corn production, (2) a continuation of the 1935 wheat program already under way, and (3) a definite commitment this fall to a longer time grain program beginning with the 1936 crop. The sign-up campaign of the longer time program should be initiated by July 1, 1935. The principal advantages of such a policy would be as follows:

- (1) With the production of feed grains and roughage at an extremely low level this year, it is advisable to encourage as much as possible the fall planting of crops which will provide feed in the form of pasture and roughage during the coming fall, winter, spring and early summer. By so doing it will tend to check the unprecedented market liquidation and low prices of livestock during the coming fall and winter and thus also tend to prevent extremely small market supplies and high prices of livestock during the following year or two. To the extent that seed can be made available to farmers at a reasonable price, fall plantings of rye should be encouraged for this purpose. Increased plantings of barley also will be advisable.
- (2) Because of the above outlined conditions, it is somewhat doubtful that a general feed reduction program for 1935 would be cordially received by farmers. Some good points in favor of such a program may be advanced, but some of these points are rather technical and might not convince producers. The reaction of city people and the press to a general feed crops reduction program following so closely in the wake of the drought, with the sign-up campaign held at a time when the effects of the drought are most apparent to the public, possibly would be so unfavorable as to bring general ill will toward the Agricultural Adjustment Program as a whole.
- (3) The conditions outlined in (1) indicate that corn is the only feed grain for which a control program is highly desirable in 1935. The reasons for corn acreage control program in 1935 have been set forth earlier in this report.

- (4) The economic situation of the flax industry in this country indicates that a production program involving that commodity in 1935 should not curtail acreage of this crop.
- (5) By postponing the inauguration of a unified grain program until July 1, 1935, it will be possible to include all of the basic grains in the program at the same time, since the wheat contracts will have expired. The sign-up campaign could be announced this fall and put on well in advance of the fall planting of grains to be harvested in 1936. It is impossible to have the sign-up campaign of a unified program for 1935 before the fall planting season.
- (6) With time available for formulating the details for a three-year program to be inaugurated in 1935 so limited, and with conditions so unsettled, such a program quite likely later would be found to be poorly adapted to conditions in 1936 and 1937, and undoubtedly drastic changes in the general plan would have to be made to meet the new conditions encountered in those years. The provisions in the contract of an optional character would have to be correspondingly numerous, and many farmers would hesitate to commit themselves to so many unknown features of a three-year program.
- (7) A 1935 corn program could be developed and put into effect with the minimum of complexity, time and expense, since it would be largely a follow-up of the 1934 Corn-Hog Program. Allotments would be easy to determine, and the same administrative machinery could be used, although a much less elaborate and expensive organization would be necessary.

It is recognized that a postponement of the unification of the grain program may make it somewhat more difficult to merge the administrative machinery into one workable unit, since the commodity type of organization would probably tend to become more established and take on more of a permanent form the longer it is perpetuated. It is for this reason that it is highly desirable to begin definite plans immediately for the unification in controlling the 1936 crop and to get the campaign under way by late spring or early summer of next year. It is further believed that a unified program for 1936 would be much preferable to individual commodity programs for each of the basic grains next year or for a majority of such crops.

Adjustment Requirements For Corn

Assuming a hog slaughter in 1934-35 of 50,000,000 head and the same slaughter in 1935-36, corn reduction of about 350,000,000 bushels would be necessary to offset the reduction in hogs from the base period 1932-33.

During the base period 1932-33, 105.5 million acres of corn produced approximately 2,600,000,000 bushels of corn, or an average yield of 25.6 bushels per acre. Assuming this same yield on the acreage devoted to corn in 1935, approximately 88,000,000 acres would be required to produce the 2,250,000,000 bushels of corn to which production would be limited in 1935 to offset the reduction in hogs from the base period, and provide the same amount of feed for other uses (2,600,000,000 minus 350,000,000). In view of the smaller supplies of other livestock, such a supply of corn would provide an opportunity for increasing livestock production somewhat, and enable reserves to be restored to more normal proportions. This production of corn would mean a reduction of 17,500,000 acres from the base period 1932-33.

It would be impossible to finance such a reduction in corn acreage from available sources of revenue. For this and other reasons, it is desirable to depend upon a farm corn storage program to remove part of the 350,000,000 bushels temporarily from the market in connection with subsequent feed production control, provided such an excess is produced. At least 150,000,000 bushels could be handled in this manner, leaving 200,000,000 bushels to be directly removed from production to reduction in acreage. Assuming average yields, this could be accomplished by a net reduction from the base period acreage of around 8,000,000 acres.

In the 1934 Program, with a contract for reduction of between 20 and 30 percent, approximately 12,656,000,000 acres were contracted to the Secretary, and the reduction in corn acres from the base period was about the same. Such an effective control cannot be expected in 1935 due to the greater incentive for the non-cooperator to increase acreage. For this reason, it is suggested that the program provide for paying benefits on around 10,000,000 contracted or converted acres in an attempt to effect the needed reduction of between 7 and 8 million acres.

For the purpose of greatest simplicity and a minimum of administrative expense, it is recommended that the program should be so planned as to represent as nearly as possible a continuation of the corn features of the 1934 Corn-Hog Program, with provisions relating to the production of other crops materially altered. To accomplish this objective, the contract probably should call for a reduction of from 20 to 30 percent upon which benefit payments would be made. This would

permit cooperating producers to designate the same contracted acreage as in 1934, thereby eliminating the necessity of new appraisals and measurements. Under these circumstances, the corn base for each contract would remain the same, and State and county quotas, already established and complied with, could be retained with only slight adjustments to care for changes in the composition of the total number of contract signers in each area. This would avoid any repetition of the very difficult task of establishing and meeting quotas in 1935. The local associations for the administration of the 1934 Corn-Hog Program could be utilized for conducting the 1935 Corn Program. In view of these advantages, local administrative expenses for conducting the campaign and checking compliance could be held far below those incurred in 1934, and probably at the lowest level that would be possible in the administration of any corn program. It is believed that there would be no necessity for an intensive campaign, in that the sign-up would be confined primarily to re-signing producers who participate in the 1934 Program. It would not be necessary to make any effort to secure participation of other producers, although provisions should be made to permit them to participate if they so desire.

Because of the prospective shortage of feed and seed in 1935, it is recommended that no restrictions be placed on the acreage planted to feed grains other than corn in 1935. As in the case of the proposed unified program, it is also recommended that contract signers be permitted to use the converted acres for producing hay and pasture including soy bean, field pea and cow pea hay. Oats should be permitted as a nurse crop if cut green for hay. The producer should be permitted to designate old sod land as converted acres, and should also be permitted to use such acres for fallow or for planting to woodlots. No restrictions should be placed on the use or sale of such crops permitted to be grown on the converted acres.

Methods of Financing The Corn Program:

In order to finance a corn program through processing taxes, it is necessary to collect processing taxes from livestock to make benefit payments for corn reduction. This is justified from the economic point of view on the ground that a reduction in corn production will result in a reduction in livestock production. There are certain legal limitations to such a procedure because it would not provide for making benefit payments directly on the commodities being taxed. However, a method of avoiding these legal difficulties has been suggested and tentatively approved by representatives of the legal section.

The analysis in Part III of this report indicate that a tax on hogs to defray in part the expenses of a corn program is well justified, because of the close relation between corn production and hog production. There is much less economic justification for a processing tax on cattle and calves. The economic analysis indicates that there is much greater justification for a compensating tax on cattle and calves as well as sheep, than there is for a processing tax on these classes of livestock. The only other source of revenue from processing taxes to meet the expenses of the corn program would be from a tax on corn which, it is assumed, could be raised from 5 cents per bushel to 10 cents per bushel.

Assuming that the appraised yield on corn on contracted acreage would be 30 bushels per acre (about the same as in the 1934 Program) and that the payment per bushel would be 50 cents, it would require \$150,000,000 to make benefit payments on 10,000,000 converted acres. It is shown in table 15 that a tax of \$1.00 per hundred pounds of hogs, 25 cents per hundred pounds on cattle and calves and 10 cents per bushel on corn would provide approximately \$117,500,000 in one year. After deducting estimated export draw backs and administrative expense, it leaves \$100,000,000 for benefit payments. Therefore, with the above tax rates there would need to be a general appropriation of \$50,000,000 to finance the program. To finance the program entirely from processing taxes, it would require a tax of \$1.25 per hundred pounds on hogs, 50 cents per hundred pounds on cattle and 10 cents per bushel on corn.

As indicated in the statement pertaining to the budget of the unified program, it would be desirable to reduce the processing tax on hogs this winter from \$2.25 to \$1.50 per hundred pounds live weight, and continue this rate through 1935-36. This would provide a more favorable corn-hog price ratio during the coming winter when it is likely to be low, and to make the ratio less favorable during the 1935-36 marketing year when it is likely to be high, and result in over-expansion in hog production. However, this could not be done unless the requirements from a processing tax on hogs to finance the 1935 Program could be kept at \$1.00 per hundred pounds.

TABLE I.--CORN: DISTRIBUTION OF AVERAGE YIELDS PER ACRE FOLLOWING YEARS
OF VERY LOW, LOW, NORMAL, AND HIGH YIELDS, UNITED STATES,
1866-1934 1/

Yields first year (Bu. per acre)	5.4 18.1 - 23.5	2.4 23.6 - 26.0	2.4 26.1 - 28.5	3.4 28.6 - 32.0
Number of cases	12	15	30	11
Average yields second year (bu. per acre)	26.6	25.5	26.2	26.0
Yields second year (Bu. per acre)	20.0 <u>2/</u> 22.2 24.4 25.8 26.5 27.6 28.0 28.2 28.5 29.1 29.3 29.6	20.2 20.4 21.9 23.8 24.7 26.2 26.2 26.2 26.8 26.8 27.2 27.3 28.1 28.3 29.1	18.2 19.7 21.8 22.9 22.9 23.9 24.1 24.2 24.4 25.7 25.9 25.9 26.1 26.7 26.9 26.9 27.0 27.1 27.2 27.9 28.0 28.1 28.1 28.2 28.4 28.6 29.3 30.0 30.3 30.9	22.1 22.7 22.9 24.1 24.7 25.4 27.2 27.2 28.4 29.5 31.7

1/ Yields from B. A. E. mimeograph entitled "Revised Estimates of Corn
Acreage, Yield and Production, 1866 to 1929" and U. S. D. A. Year Book
for 1934. 2/ Estimated yield for 1934.

TABLE II--LIVESTOCK: INDEXES OF GRAIN PRODUCTION, GRAIN CONSUMING ANIMAL UNITS, AND MEAT PRODUCTION, 1900-1935 1/

Year	3-yr. average grain production <u>2/</u>	Grain Consuming Animal Units				Meat Production		
		Total	Cattle and Calves	Hogs	Sheep and Lambs	Beef and Veal	Pork and Lard	Lamb and Mutton
	1910-1914 = 100	1910-1914 = 199				1910-1914 = 100		
1900	83.9	92.7	96.3	98.7	102.4	89.5	94.4	72.7
1901	78.2	95.0	100.7	99.8	106.1	93.4	94.2	75.7
1902	81.4	91.8	103.1	87.8	107.7	94.1	84.9	78.9
1903	80.1	93.1	105.6	88.6	104.2	106.2	87.3	81.9
1904	90.3	95.1	106.5	92.9	97.9	104.7	93.5	79.3
1905	91.9	97.2	107.0	97.6	93.7	107.1	91.5	76.7
1906	98.3	99.2	106.2	102.4	97.7	107.7	95.5	78.1
1907	97.1	101.4	105.9	107.5	101.9	116.8	101.7	78.8
1908	94.0	103.8	104.1	115.0	105.0	108.3	105.3	78.6
1909	91.1	101.1	102.8	106.9	109.5	115.1	94.4	84.8
1910	96.7	97.1	101.0	92.5	108.8	110.1	88.8	84.2
1911	96.8	101.1	98.9	104.5	109.3	106.0	103.7	103.0
1912	104.2	100.7	97.5	104.5	100.1	97.4	100.7	109.6
1913	99.7	100.4	99.1	101.3	94.3	95.7	104.1	102.8
1914	102.5	100.7	103.4	97.2	87.5	90.8	102.7	100.0
1915	102.0	108.5	109.3	106.9	83.8	93.2	109.7	87.5
1916	103.9	112.5	114.9	112.0	84.5	99.2	115.8	85.5
1917	110.2	112.2	119.6	106.4	83.4	109.6	96.5	66.5
1918	105.7	116.9	122.8	114.8	88.4	120.7	123.3	69.3
1919	106.7	118.8	121.8	119.7	92.8	113.5	123.8	84.8
1920	106.9	117.7	121.3	112.9	91.6	112.7	119.3	74.8
1921	108.3	116.8	119.0	110.6	88.7	103.7	122.4	88.0
1922	108.6	117.0	119.5	112.3	83.0	112.6	133.1	75.2
1923	105.0	123.5	118.2	130.0	82.7	116.1	155.2	80.3
1924	101.2	120.1	116.4	124.9	83.4	120.0	150.8	82.8
1925	104.3	115.2	113.0	104.5	86.5	122.3	131.4	84.2
1926	101.2	109.8	108.6	97.7	90.5	126.4	131.7	90.4
1927	103.8	110.6	105.1	104.1	95.3	115.5	136.5	90.7
1928	103.4	114.8	104.0	115.9	101.7	103.5	150.2	94.4
1929	103.6	112.3	105.8	110.3	108.7	103.3	148.2	98.3
1930	98.8	109.9	109.0	103.8	115.4	103.7	139.8	115.3
1931	95.5	109.3	111.5	102.1	118.5	105.0	141.6	123.5
1932	99.9	114.1	114.9	110.7	119.8	101.3	146.0	123.1
1933	98.7	116.1	119.8	115.0	116.6			
1934 <u>3/</u>	90.3		123.2	105.0	115.8			
Av.	1,000 tons	Thousands of animal units				Million pounds		
1910-14	98,857	103,319	38,240	46,371	1,775	6,661	7,975	711

1/ Based on grain production, animal units, and livestock numbers as given in "Crops and Hog Statistics", A.A.A., Nov. 1933. Brought to date from "Crops and Markets", December 1933 and February 1934. Meat Production from "Statistics of Meat Production Consumption and Foreign Trade of the United States". 2/ 3 year moving average centered on third year. 3/ Preliminary.

Production Planning Section, A. A. A., Aug. 9, 1934.

TABLE III--LIVESTOCK: TOTAL DISAPPEARANCE OF CATTLE, CALVES, SHEEP, LAMBS AND HOGS FOR UNITED STATES AND PER CENT OF DISAPPEARANCE ACCOUNTED FOR FROM NORTH CENTRAL STATES, 1928-32

[illegible]

1/ As entered on the livestock balance sheets of the Division of Crop and Livestock Estimates.
Subject to Revision.

Production Planning Section, A. A. A., August 8, 1934.

TABLE IV -- HOGS AND CORN: CORN PRODUCTION AND HOG PRODUCTION,
WEIGHTS, AND SLAUGHTER, 1919-1933

Year	Corn Production		Calendar Year Hog Production				Average Oct-Sept. Weight	May-April Inspected Slaughter
	U. S.	No.Cen. States	U. S.	No.Cen. States	Insp. Slaugh- ter	N.C.S. Ship- ments ^{1/}		
1919	2,678	1,836	-	-	-	-	-	39,302
1920	3,071	2,166	-	-	38,019	-	226.2	37,971
1921	2,928	2,024	-	-	38,982	-	226.8	38,546
1922	2,707	1,928	67,860	49,695	43,114	-	226.0	47,735
1923	2,875	2,161	78,700	61,618	53,334	-	223.7	54,478
1924	2,298	1,668	77,942	60,235	52,873	53,350	221.6	50,108
1925	2,853	2,221	67,578	51,065	43,043	44,246	237.6	40,800
1926	2,575	1,835	62,298	47,745	40,636	41,029	232.3	41,191
1927	2,678	1,932	65,458	49,547	43,633	42,708	228.5	48,406
1928	2,715	2,096	72,760	55,169	49,795	48,645	231.7	47,571
1929	2,536	1,881	70,768	54,396	48,445	48,016	231.2	46,730
1930	2,065	1,561	66,664	51,725	44,266	45,795	234.2	44,874
1931	2,589	1,789	67,596	53,894	44,772	48,165	227.7	45,251
1932	2,907	2,219	69,057 ^{2/}	53,214	45,245	46,927	231.8	44,046
1933	-	-	71,159 ^{1/}	53,987 ^{2/}	47,226	47,902	223.8 ^{2/}	46,703 ^{3/}

^{1/} Subject to revision. Estimated net shipments of hogs from North Central States.
^{2/} Preliminary. ^{3/} Pigs and sows slaughtered purchased by A.A.A. in 1933 not included.

Production Planning Section, A.A.A., August 1, 1934.

TABLE V -- HOGS AND CORN: COMMERCIAL HOG SLAUGHTER, TOTAL CORN SUPPLY, AND AVERAGE SUPPLY PER HOG, 1900-1934.

Year	Commercial hog Slaughter % of year previous	Corn Production	Corn Stocks	Total Corn Supply	Jan. 1 Hog Numbers	Corn Supply per Hog		Two-year average Supply per hog.	
						Actual	% of year previous	Actual	% of year previous
		Million Bushels			Thou- sands	Bu.	%	Bu.	%
1900	-	2,662		2,662	53,200	50.0	101	50.2	-
1901	-	1,716		1,716	46,800	36.7	73	43.4	87
1902	97	2,774		2,774	47,200	58.8	160	47.8	110
1903	106	2,515		2,515	49,500	50.8	86	54.8	115
1904	111	2,687		2,687	52,000	51.7	102	51.2	93
1905	103	2,954		2,954	54,600	54.1	105	52.9	103
1906	101	3,033		3,033	57,300	52.9	98	53.5	101
1907	104	2,614		2,614	61,300	42.6	81	47.8	89
1908	99	2,567		2,567	57,000	45.0	106	43.8	92
1909	79	2,611		2,611	49,300	53.0	117	49.0	112
1910	115	2,853		2,853	55,700	51.2	97	52.1	106
1911	109	2,475		2,475	55,700	44.4	87	47.8	92
1912	97	2,948		2,948	54,000	54.6	123	49.5	104
1913	97	2,273		2,273	51,800	43.9	80	49.2	99
1914	114	2,524		2,524	57,000	44.3	101	44.1	90
1915	113	2,829		2,829	59,700	47.4	107	45.8	104
1916	92	2,425		2,425	56,700	42.8	90	45.1	98
1917	97	2,908		2,908	61,200	47.5	111	45.2	101
1918	118	2,441		2,441	63,800	38.3	81	42.9	95
1919	88	2,679	137	2,816	60,159	46.8	122	42.6	99
1920	99	3,071	224	3,295	58,942	55.9	119	51.4	121
1921	104	2,928	407	3,335	59,849	55.7	100	44.8	109
1922	125	2,707	272	2,979	69,304	43.0	77	49.4	89
1923	106	2,875	155	3,030	66,576	45.5	106	53.8	89
1924	86	2,298	178	2,476	55,770	44.4	98	45.0	102
1925	89	2,853	123	2,976	52,085	57.1	129	50.8	113
1926	105	2,575	263	2,838	55,468	51.2	90	54.2	107
1927	110	2,678	192	2,870	61,772	46.5	91	48.9	90
1928	103	2,715	88	2,803	58,789	47.8	103	47.2	97
1929	93	2,536	147	2,683	55,301	48.5	101	48.2	102
1930	96	2,065	132	2,197	54,399	40.4	83	44.4	92
1931	107	2,589	160	2,749	58,988	46.6	115	43.5	98
1932	101	2,907	251	3,158	61,320	51.5	111	49.1	-
1933	-	2,344	316	2,660	55,976	47.5	92	49.5	-
1934	-	-							

Commercial hog slaughter for October through September slaughter year based on figure from Table 8 "Farmer's Response to Price in Hog Production". Commercial slaughter is equivalent to slaughter under Federal inspection from 1907-08. Corn Production and hog numbers from revised figures of Division of Crop and Livestock Estimates. Pigs and sows purchased and slaughtered in 1933 by Agricultural Adjustment Administration not included.

TABLE VI -- HOGS AND CORN: CORN SUPPLY PER HOG AND HOG-CORN RATIOS, 1919-1933

Year	North Central States			Oct.-Sept. Hog-corn Ratio			Chicago	Chicago
	Corn per hog	Corn per Spring Pig	% Hogs in West	U. S.	No. Cent. States	Chicago	Apr.-Sept. Ratio	Oct-Apr. Ratio
1919	50.5			8.8	9.6	9.4	11.5	9.6
1920	58.5		62.0	13.5	16.6	14.9	9.1	14.9
1921	52.0		65.5	15.2	18.0	16.2	14.8	16.8
1922	39.5	40.0	67.0	10.0	10.9	10.3	15.7	11.4
1923	45.0	43.0	67.5	8.3	9.0	8.7	9.0	8.9
1924	41.0	40.0	68.5	9.8	10.7	10.8	8.5	9.4
1925	58.5	56.0	68.5	16.3	18.3	16.0	12.0	15.4
1926	46.0	45.0	68.0	14.0	14.8	13.3	17.0	16.1
1927	43.5	45.0	69.0	10.0	10.7	9.9	10.4	9.6
1928	49.0	49.5	70.5	10.9	11.9	11.0	10.1	10.9
1929	47.0	46.0	72.0	11.1	12.2	11.3	11.4	11.5
1930	39.0	38.5	72.0	11.7	13.0	11.9	11.3	11.9
1931	42.0	40.5	71.5	11.9	12.9	12.2	12.0	11.8
1932	51.0	55.5	68.0	12.0	14.4	11.7	12.6	13.5
1933	42.0	40.0	67.0	7.8 <u>1/</u>	9.0 <u>1/</u>	8.0 <u>1/</u>	9.4	8.6

1/ Estimated. Subject to revision.

Production Planning Section, A. A. A., Aug. 1, 1934.

TABLE VII -- CATTLE: CORN PRODUCTION IN EIGHT MAJOR CORN-BELT STATES
AND SLAUGHTER OF FED STEERS AT CHICAGO THE
FOLLOWING FALL, 1921-1932

Rank from smallest to largest corn production	Year	Corn Production <u>1</u> / (Million bu.)	Number of steers sold following fall <u>2</u> /
1	1930	1,366	130,550
2	1924	1,445	111,906
3	1926	1,620	99,098
4	1929	1,647	152,776
5	1922	1,650	104,619
6	1927	1,669	103,482
7	1931	1,693	109,403
8	1921	1,725	135,613
9	1928	1,834	157,588
10	1923	1,861	132,395
11	1925	1,970	159,848
12	1932	1,991	143,426
Average 3 years of smallest corn production (a)		1,477	113,851
Average 3 years of largest corn production (b)		1,941	145,223
Percentage increase a to b		+ 31%	+ 28%

1/ Corn production 8 States: Ohio, Indiana, Illinois, Missouri, Nebraska, Kansas, Minnesota and Iowa. Revised Estimates of Corn Acreage, Yield and Production, 1921-29, December issues Crops and Markets, 1930-1932.

2/ Choice to good beef steers from the corn belt sold out of first hands at Chicago for slaughter, in September and October. Crops and Markets, U. S. D. A.

Production Planning Section, A. A. A.
August 7, 1934.

TABLE VIII --- CATTLE: DEFLATED PRICE OF CORN AND NET LIVESTOCK DISAPPEARANCE OF CATTLE
AND CALVES FOR NORTH CENTRAL STATES, 1924-1933

Year beginning Nov. 1	Deflated Price No. 3 Yellow Corn at Chicago 1/	Year beginning Jan. 1	Net Liveweight Disappearance of Cattle & Calves 2/		
			East North Central	West North Central	North Central States
Average 1924-1933	Cents per Bu.		Millions of pounds liveweight		
	58		1,945	5,022	6,868
1923-24	62	1924			7,795
1924-25	71	1925	2,092	5,073	7,680
1925-26	51	1926	2,085	5,595	8,038
1926-27	62	1927	2,114	5,924	6,922
1927-28	71	1928	2,084	4,838	6,043
1928-29	66	1929	1,900	4,143	5,977
1929-30	64	1930	1,656	4,321	6,577
1930-31	55	1931	1,920	4,657	6,621
1931-32	37	1932	1,762	4,859	6,624
1932-33	37	1933 3/	1,855	4,769	6,399
1933-34		1934	1,985	5,414	

1/ Corn prices adjusted by Bureau of Labor Statistics price index, 1910-1914 = 100.

2/ Net liveweight marketed as entered on the livestock balance sheets of the Division of Crop and Livestock Estimates.

3/ Preliminary.

Production Planning Section, A. A. A., August 7, 1934.

TABLE IX --- DAIRY PRODUCTS: INDEXES OF FEED, DAIRY, AND MEAT ANIMAL PRICES, NUMBERS, AND PRODUCTION,
1910 = 1934

	PRICE 1/			Number on Jan. 1st 1/				PRODUCTION 2/			
	Feed	Dairy	Hogs	Beef	Milk	Other	Horses	Feed	Hay	Milk	Livestock
	Grains	Products		Cattle	Cows	Cattle	& Mules	Grains		Used	Slaughter
	1910-14 = 100			1920 = 100				1920 or 1921 = 100			
1910	98	99	113	90							
1911	94	95	87	84							
1912	110	102	93	97							
1913	95	105	103	111							
1914	107	102	105	118							
1915	112	103	91	113							
1916	117	109	111	112							
1917	204	135	188	154							
1918	222	163	220	178							
1919	218	186	224	181							
1920	212	198	180	159	100	100	100	100	100	100	100
1921	91	156	108	104	100	97	98	102	94	106	100
1922	92	143	116	102	102	96	95	102	90	115	109
1923	115	159	98	105	103	93	93	97	87	126	124
1924	132	149	103	105	104	89	90	96	85	133	125
1925	140	153	145	118	105	83	88	95	82	139	116
1926	105	152	163	121	104	77	85	98	81	142	118
1927	119	155	134	136	103	72	82	98	82	146	117
1928	132	158	121	172	103	71	79	98	83	151	118
1929	126	157	130	173	104	73	77	93	83	155	117
1930	110	137	122	141	107	75	74	91	85	161	112
1931	71	108	81	100	110	77	71	94	86	164	113
1932	44	83	48	77	114	78	70	95	86	169	109
1933	58	82	49	69	118	82	67	--	--	--	--
1934	--	--	--	--	121	84	66	--	--	--	--

1/

Data supplied by Frank Robotka, Dairy Section, Agricultural Adjustment Administration.

Price received by producers and numbers on hand January 1 as reported by Division of Crop and Livestock Estimates, B. A. E., 2/ 3-year moving average of feed grain and hay production and of milk used in production of manufactured dairy products centered on second year. Livestock slaughter under Federal inspection.

Production Planning Section, A. A. A., August 8, 1934.

- TABLE X -- POULTRY: FEED GRAIN PRODUCTION, FEED-EGG PRICE RATIO, HENS AND PULLETS OF LAYING AGE IN FARM FLOCKS ON MARCH 1, AND YOUNG CHICKENS IN FARM FLOCKS ON JUNE 1, 1920-1933.

Year	Feed-grain Production	Feed-egg price Ratio		Hens and Pullets	Young
		July to June	March, April and May	on March 1	Chickens on June 1
	Thousands of tons	Dozens of eggs to buy 100 pounds of feed		Average number per farm flock	
1920	117,634	5.48	-	-	-
1921	106,022	4.54	-	-	-
1922	101,434	5.63	-	-	-
1923	108,422	5.85	-	-	-
1924	95,280	6.50	-	-	-
1925	110,212	5.45	-	-	-
1926	98,184	5.86	-	-	-
1927	102,548	6.58	6.17	88.9	142.9
1928	109,830	5.78	6.64	89.1	130.2
1929	99,626	5.75	5.51	84.0	138.3
1930	92,080	6.56	5.88	88.0	145.7
1931	103,370	5.19	5.87	83.7	127.3
1932	115,254	4.42	5.56	81.6	130.6
1933	85,130	6.47	4.96	82.6	138.9
1934	-	-	5.98	82.0	124.4

Data supplied by Edgar L. Warren, General Crops Section, A. A. A.

Production Planning Section, A. A. A., August 8, 1934.

TABLE XI -- ESTIMATED NET CHANGE IN THE TOTAL FEED UNITS AVAILABLE FOR EACH CLASS OF LIVESTOCK DUE TO A REDUCTION OF 20 PER CENT IN FEED GRAINS, AND THE ESTIMATED RESULTING INCREASE IN HAY AND PASTURE.

Item	Hogs	Horses and Mules	Dairy Cattle	Beef Cattle	Sheep	Poultry
Per cent reduction in feed grains	- 30	- 20	- 15	- 30	- 30	- 5
Per cent reduction in total feed due to reduction in feed grains <u>2/</u>	- 27	- 11	- 4	- 4	- 2	- 4
Per cent increase in hay <u>1/</u>	-	20	32	26	16	-
Per cent increase in total feed due to increase in hay <u>2/</u>	-	+ 5	+ 5	+ 4	+ 3	-
Increase in silage	-	0	0	0	-	-
Per cent increase in pasture <u>1/</u>	-	2	3 $\frac{1}{2}$	3	1	-
Per cent increase in total feed due to increase in pasture <u>2/</u>	-	-	+ 1	+ 2	+ 1	-
Per cent decrease in straw and fodder	-	- 20	- 20	- 20	- 20	-
Per cent reduction of total feed due to decrease in straw and fodder <u>2/</u>	-	- 1	- 3	- 2	- 1	-
Per cent net change in total feed and pasture	- 27	- 7	- 1	- 0	+ 1	- 4

Prepared in Division of Farm Management and Costs, B. A. E., August 8, 1934. Subject to revision.

- 1/ In allocating the increase in hay and pasture to the various classes of livestock the different geographic divisions were given their proper weight both as to the numbers of the particular class of livestock and as to the increase in hay and pasture. It was assumed that there would be no change in silage.
- 2/ The net effect on total feed of a given increase or decrease in grain, hay or pasture was obtained by weighting the increase or decrease by the per cent that each kind of feed makes up of the total feed. For instance, an increase of 32% in hay for dairy cattle would not increase the total feed units more than 5% as hay probably makes up only about 15% of the total feed of dairy cattle.

DEPARTMENT OF AGRICULTURE
AGRICULTURAL ADJUSTMENT ADMINISTRATION

TABLE XIV-- FINANCIAL STATEMENT WITH RESPECT TO CURRENT CORN-HOG AND WHEAT PROGRAMS

	CORN	HOGS	CORN & HOGS COMBINED	WHEAT	TOTAL
Crops Controlled	1934	1934		1934 - 1935	
Tax Period	11/4/33 to 11/3/35			7/8/33 to 7/8/35	
Funds Available for Programs:					
Processing Taxes	\$ 12,000,000	\$387,000,000	\$399,000,000	\$240,000,000	\$639,000,000
Floor Stocks Taxes	1,100,000	6,300,000	7,400,000	13,400,000	20,800,000
Other Available Funds	38,200,000	3,000,000	41,200,000	-- --	41,200,000
Total	\$ 51,300,000	\$396,300,000	\$447,600,000	\$253,400,000	\$701,000,000
Expenditures:					
Rental and Benefit Payments	\$111,000,000	\$195,000,000	\$306,000,000	\$200,600,000	\$506,600,000
Removal of Surpluses		65,000,000	65,000,000	12,000,000	77,000,000
Refunds of Taxes	1,700,000	49,700,000	51,400,000	37,400,000	88,800,000
Administrative Expenses	4,896,450	8,603,550	13,500,000	7,612,800	21,112,800
Total Expenditures	\$117,596,450	\$318,303,550	\$435,900,000	\$257,612,800	\$693,512,800
Excess of Collections over Expenditures	\$ 66,296,450	\$ 77,996,450	\$ 11,700,000	\$ 4,212,800	\$ 7,487,200

Budget Section,
Finance Division,
July 27, 1934.

TABLE XV -- ESTIMATED TAXABLE UTILIZATION OR PRODUCTION, RATE OF TAX, AND PROBABLE REVENUE
FOR BASIC GRAINS AND LIVESTOCK, 1935-36.

Commodity	Farm Prices on July 15th		Taxable Utilization or Production	Tax Program No. 1		Tax Program No. 2	
	Actual	Parity		Proposed Tax	Estimated Revenue	Proposed Tax	Estimated Revenue
	Per bushel			Per Bu.		Per bu.	
Wheat	\$ 0.788	\$ 1.078	400,000,000 Bu.	\$ 0.30	\$ 120,000,000	\$ 0.30	\$ 120,000,000
Rye	.618	.878	12,500,000 "	.20	2,500,000	.20	2,500,000
Flax 1/	1.680	2.063	22,500,000 "	.30	6,750,000	.30	6,750,000
Corn	.592	.783	125,000,000 "	.10	12,500,000	.10	12,500,000
Barley	.526	.755	37,500,000 "	.10	3,750,000	.10	3,750,000
Grain Sorghums	-	-					
	Per live cut			Per cwt.		Per cwt.	
Hogs	3.970	8.810	88,000,000 cwt. 2/	1.00	88,000,000	1.25	110,000,000
Beef cattle	3.900	6.360	100,000,000 " 2/	.25	25,000,000	.35	35,000,000
Butterfat	0.221	0.297	2,700,000,000 lbs. 4/	-	-	-	-
Oleomargarine	-	-	200,000,000 lbs.	-	-	-	-
Total Gross Returns					258,500,000		290,500,000
10 per cent deduction for refunds and exports					25,850,000		29,050,000
Estimated Net Return					232,650,000		261,450,000

^{1/} Compensating taxes should be levied on such competing oils as perilla, tung, and soybean. ^{2/} 50 million 235 pounds hogs total slaughter, 75% taxable. ^{3/} 11 million 950 pounds cattle and 7 million 175 pounds calves total slaughter, 85% taxable. ^{4/} Total milk. About 1,350,000,000 pounds taxable as butterfat or milk for manufacture of butter, cheese, ice cream, and condensed and evaporated milk.

TABLE XVI -- UNITED STATES STOCKS OF WHEAT, OTHER SMALL GRAINS, AND CORN, 1919 to 1934

Year	Wheat and Flour on July 1		Rice on 4/ Aug. 1	Rye on 5/ July 1	Barley on Aug. 1		Oats on July 1		Corn		Other 6/ Oct. 1
	Wheat				on July 1	Farms 1/ Farms 1/	Other 6/ Farms 1/	on July 1	Farms 1/ Farms 1/	Other 6/ Oct. 1	
	On Farms 1/ Farms 1/	Other 2/ Farms 1/									
1919	19	31	7	9	12	10	203	18	-	137	2
1920	49	61	11	4	3	3	132	4	-	224	8
1921	57	37	7	1	13	2	312	34	-	407	12
1922	33	49	8	2	5	1	169	43	-	272	12
1923	35	67	10	15	6	1	159	9	-	155	2
1924	29	76	10	17	5	1	150	5	-	178	7
1925	29	86	9	7	5	1	189	33	-	123	5
1926	27	78	10	11	9	2	229	38	536	263	17
1927	27	96	9	1	3	3	151	18	444	192	25
1928	20	104	9	2	7	3	112	3	292	88	7
1929	45	202	14	7	16	10	178	9	396	147	4
1930	60	243	20	12	12	7	144	11	349	132	5
1931	38	288	7	10	14	7	169	8	312	160	6
1932	93	292	7	9	6	3	143	11	527	251	19
1933	82	308	7	11	16	15	204	28	628	316	60
1934	61	200 1/	-	-	-	-	108	-	470	-	-

1/ Grain stocks on farms as reported by Division of Crop and Livestock Estimates. Corn stocks on Oct. 1, 1919-1925, estimated from reported stocks on Nov. 1. Oat stocks on July 1, 1919-1925, estimated from reported stocks on August 1. 2/ Commercial stocks, in country elevators and mills, in merchant mills and elevators, and in transit to merchant mills and bought to arrive. Incomplete from 1919 through 1924. 3/ Flour in terms of wheat as reported by Chicago Daily Trade Bulletin. 4/ Rough and cleaned rice as reported by the Rice Millers Association in terms of rough rice. 5/ Visible supply of rye as reported by Chicago Daily Trade Bulletin. 6/ Bradstreet's visible supply of barley, oats, and corn from 1919 to 1926. Commercial stocks of domestic barley, oats, and corn from 1927 to 1933. 7/ Estimated.

Production Planning Section, A. A. A., July 25, 1934.

